Fires

The Beginning...
2007

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Note: The *Fires* staff wishes to thank RCW Communication Design, Inc., of Alexandria, Virginia, for the quality design and layout of this magazine.

Front Cover: A Patriot Advanced Capabilities (PAC)-3 missile is launched during testing at White Sands Missile Range in New Mexico. A PAC-2 cannister is in the foreground. Patriot is a high- to medium-altitude air defense system designed to intercept tactical ballistic missiles (TBMs) and "air-breathing" threats. (Photo Courtesy of Lockheed Martin)

Fires 2007 —The Beginning...

By Major General David C. Ralston, Chief of FA, and Major General Robert P. Lennox, Chief of ADA

I t is with great pleasure that we introduce the new *Fires* Professional Bulletin (PB) 644, the newest Army publication for Air Defense Artillery (ADA) and Field Artillery (FA) Soldiers and Marines worldwide. *Fires* will report the present, acting as a change agent for joint fires; analyze the past, helping our forces apply relevant lessons learned; and look forward to the future, helping the force prepare for what is to come.

The FA and ADA branch magazines trace their lineages back to the early 1900s when horses still towed artillery caissons and the only air threat was observation balloons. For almost a century, branch journals and branch insignia have served to give individual combat arms a sense of identity. Even though the Army's ADA and FA branches are not merging, we've decided to merge our magazines, *Field Artillery* and *Air Defense Artillery,* into *Fires,* the single combined publication you are now reading. It was not a decision made lightly. It is, however, a decision we are convinced is the right one.

Why combine the magazines? One could answer, "It is an economic decision directed by the Base Realignment and Closure (BRAC) Committee." That's certainly true. But the answer also is, "It is the right thing to do for the transforming Army."

Combining the two branches' professional magazines into the one *Fires* Bulletin, in fact, goes to the heart of the joint force's transformation. The Army is moving toward a rapidly deployable force for joint warfighting configured into future combat system (FCS) brigade combat teams (FBCTs) with common systems and functions, starting in 2015. With advanced technology, evolving doctrine and warfighting tactics, the Army will be more capable of fighting across the spectrum of joint conflict.

In that transformation process, the Army and Marine Corps are training and developing multi-capable Pentathletes, consolidating military occupational specialties (MOS) and similar units, employing fewer forces over larger areas of operations in zones of conflict, integrating all joint capabilities and consolidating schools' common functions and locations into centers of excellence (CoEs).

Our two branches will work to provide combatant commanders with unique warfighting capabilities that are network-centric and include deterrence, shaping, defense, protection and response. These missions can't be done by one branch independently of the other. We will execute these missions together as the Fires Center of Excellence.

The advent of *Fires* facilitates the development of the Fires CoE at Fort Sill, Oklahoma—one of the earliest and most visible transformation events for the CoE. It is a communications and team-building tool for the Chiefs of ADA and FA to reach the two branches simultaneously—one quality magazine for the professional development of *all* US Artillerymen.

Why call the magazine *Fires*? The longer subtitle of the magazine helps explain: *A Joint Professional Bulletin for US Field & Air Defense Artillerymen. Fires* is a joint magazine serving 65,000 active and Reserve Component (RC) Army Air Defense Artillerymen and Army and Marine Field Artillerymen.

The magazine represents all US ground forces' indirect fires and air and missile defense (AMD) capabilities from the strategic down to the tactical levels. It is for the professional development of FA and ADA forces with missions ranging from taking out an enemy intercontinental ballistic missile (ICBM) in flight toward a US or allied territory to an enemy mortar crew setting up in a friendly urban area—powerful joint fires. The magazine accurately could have been called *Joint Fires.*

The marriage of the US Artilleries' PBs into one magazine is logical. ADA provides fires to protect the joint force while the Army and Marine Corps FA provide and coordinate fires and effects

to attack the enemy and protect the joint force. Both have inherently joint missions and represent the surface fires of the most powerful joint force in history. As is true of our nation, our diversity is our strength.

Fires is the first of the BRAC-directed magazines to merge, serving as a model for others to follow. Even its purpose statement is innovative in terms of the joint and combined force. As outlined in the table of contents, the magazine "serves as a forum for the professional discussions of [US Artillerymen]; disseminates professional knowledge about the ADA's and FA's progress, development and best use in campaigns; cultivates a common understanding of the power, limitations and application of joint fires,

both lethal and nonlethal; fosters joint fires interdependency among the armed services; and promotes the understanding and interoperability between the ADA's and FA's active and RC units—all of which contribute to the good of ADA and FA, the Army, joint and combined forces, and our nation."

Fires promises to continue the proud tradition of excellence in professional development and discourse for the two branches, supporting their transformation. The *Fires* PB will chronicle combat deployments, examine emerging threats, explore new weapons technologies and explain innovative strategies, tactics, techniques and procedures as they apply to both branches. *Fires* will record our progress toward a single, unified goal:

enhancing combatant commanders' capabilities and the modular force's ability to operate at will on future battlefields.

Whether US Artillerymen are deployed executing their branch or Pentathlete missions across the spectrum of joint conflict, watching over and protecting our homeland or training, *Fires* will capture and facilitate their contributions—their crucial roles and missions.

1st Armored Division Artillery Inactivates

On 1 May 2007, the last division artillery (Div Arty) in the US Army inactivated. With a simple ceremony, the *Iron Steel* team ended another chapter in the history of the US Field Artillery (FA). The 1st Armored Div Arty cased its colors on Minnick Field in Baumholder, Germany. The Div Arty consisted of a Headquarters Battery, 1st Battalion, 94th FA (1-94 FA), 4-27 FA, 2-3 FA and 1-1 Cavalry (Cav). Symbols of Army transformation were everywhere as 1-1 Cav's colors already were cased during its inactivation earlier in the week, and 2-3 FA, 4-27 FA and D Battery, 1-94 FA (D/1-94 FA) watched from the grandstands, having already become organic to their brigade combat teams (BCTs).

Through the years, Div Artys have produced some of the Army's great leaders, including Generals Anthony C. McAuliffe of Bastogne fame; William C. Westmoreland, Commander of the Military Assistance Command in Vietnam (MACV); Maxwell D. Taylor, who commanded the 101st Airborne Division on D-Day; and Tommy R. Franks, Commander of Central Command (CENTCOM) for both Operations Enduring Freedom (OEF) and Iraqi Freedom (OIF).

The 1st Armored Div Arty was constituted on 15 July 1940 and activated at Fort Knox, Kentucky. From humble origins, the Div Arty grew into a legendary fighting force, supporting the 1st Armored Division during World War II in North Africa and Italy and, later, in Operation Desert Storm (ODS), the Balkans and OIF. Whether in Europe or in the desert, *Iron Steel* proved to be a force to be reckoned with as part of the *First Tank Division*.

Mirroring the Army's move to a brigade-based structure, Field Artillery has shifted its nexus to battalions embedded in and integral to the BCTs and unique fires brigades, the latter augmenting divisions or corps.

Although the inactivation of the last Div Arty marks the end of an era, the legacy of the Div Arty lives on. Flexible and responsive as always, the FA continues to support maneuver commanders with capable fires professionals, part of the *King of Battle*.

MAJ Thomas A. Crowson, FA
1st Armored Div Arty S3
Baumholder, Germany

1st Armored Div Arty Commander Colonel Darryl A. Williams, left, steadies the colors while the Div Arty Communications Systems Support NCO Sergeant William A. Kopf, center, and Div Arty Fire Control NCO Sergeant James C. Davis furl and case the colors on 1 May 2007.

Photo by SFC Terry Roberts, 1st Armored Div Arty S6 NCO

COIN:
A Fires Battalion as a Maneuver TF

Soldiers of C Battery, 2nd Battalion, 8th Fires (C/2-8 Fires), part of Task Force (TF) Automatic, conduct a combined patrol with the 1st Iraqi Army (IA) Battalion in Operation Iraqi Freedom (OIF) III.

By Colonel Bradley A. Becker, FA

Perhaps more than other Soldiers, our Field Artillerymen truly are living up to the Pentathlete standard set by the Chief of Staff of the Army. Since the beginning of Operations Enduring Freedom and Iraqi Freedom (OEF and OIF), our great Soldiers have conducted a myriad of missions very well—missions such as providing world-class fire support, conducting counterfire operations, providing convoy security, conducting fixed-site security and base defense operations, and conducting foreign internal defense missions. Further, many Field Artillery (FA) battalions have transformed into maneuver units and conducted area security and counterinsurgency (COIN) operations in their own battalion areas of operations (AOs). 2nd Battalion, 8th Fires (2-8 Fires), 1st Stryker Brigade Combat Team (SBCT), 25th Infantry Division, served as maneuver Task Force (TF) Automatic in Iraq from October 2004 until September 2005.

This article is about battalion TF lessons learned and key insights during that rotation. The intent is to help future leaders

succeed in the extremely challenging and often confusing tactical environments that characterize COIN. After a brief overview of the operational environment, the article discusses three topics: fires battalion considerations in COIN, winning the trust and confidence of the local people and working with the Iraqi security forces (ISF).

AO and Mission. TF Automatic was responsible for a rural area in the Tigris River Valley just south of Mosul. The AO was approximately 140 by 110 kilometers and included nine major population centers with literally hundreds of small villages dotting its desert. The approximately 80,000 people living in this area were predominantly Sunni Arab and, most importantly, comprised more than 30 different tribes, further complicating local issues.

When we arrived in October of 2004, this area was relatively quiet with fewer than one attack per day; the majority of those were improvised explosive

device (IED) attacks along the main supply route (MSR) leading into Mosul and rocket attacks against our forward operating base (FOB). However, based on the assessment of the special forces team assigned to our area, the Tigris River Valley had become a safe haven for terrorists operating in Mosul. These terrorists were using our area to hide in, recruit other terrorists and cache weapons and ammunition.

Our mission was to provide area security. Some of our key tasks included conducting civil-military operations (CMO), training and employing the ISF, and neutralizing the anti-Iraqi forces (AIF). Our short-term goal was to establish a safe and secure environment for the January 2005 elections. Our long-term goals were to transfer security responsibility of the area to the ISF and empower the local government to provide the basic services for its people.

Fires Battalion as a Maneuver TF. We transformed our three firing batteries into three maneuver companies. Each company had two maneuver platoons

Soldiers from B Battery, TF Automatic, and the 3rd Iraqi Army Battalion inventory a large weapons cache discovered during a combined operation.

and a small headquarters platoon. The battery fire direction officer (FDO) became dual-hatted; his primary role was as a company fire support officer (FSO) with his secondary role as an FDO.

Battery-Level Operations. An important challenge for an artillery battery operating as a maneuver company is how to process the huge amount of information that is generated at the platoon level and fuse that information with the battalion intelligence. Several times after an incident happened, we realized that between the battery and battalion, we had all the information needed to act, but we failed to "connect the dots." This also is a challenge for infantry companies.

Consequently, there has been a lot of talk about creating intelligence fusion cells at the company level. Based on my experience, I fully support the idea, especially for COIN.

Our battalion TF did not have as many platoons as desired for a continuous small-unit presence in the villages to protect the population and develop intelligence for effective COIN. Even with an attached infantry company, we only had nine maneuver platoons to patrol an area roughly half the size of Rhode Island.

While the Army's new *Field Manual (FM) 3-24 Counterinsurgency* recommends 20 counterinsurgents for every 1,000 residents, we had a ratio of about 3.4 counterinsurgents per 1,000 residents (FM dated December 2006, Page 1-13). So it was critical to make the most of the

Soldiers we had in such a challenging environment.

With this in mind, we found some creative ways to build two additional platoons using headquarters battery Soldiers. As part of force protection, we maintained a platoon-sized quick-reaction force (QRF) and conducted counterrocket patrols around our FOB. To ensure that we had the maximum number of platoons patrolling the AO, we built our QRF and counterrocket platoons from headquarters battery personnel and did not task the maneuver companies to conduct these missions. In keeping with the Pentathlete concept, we used headquarters battery Soldiers from the battalion fire direction center (FDC); the meteorological (Met), radar and survey sections; and the battalion S1 and S4 shops in the QRF and counterrocket platoons. We established a battalion climate of no "soft" military occupational specialties (MOS) and made all Soldiers experts with their weapons.

Not surprisingly, the QRF Soldiers performed magnificently while executing some very dangerous missions. The QRF regularly conducted missions in support of Other Coalition Forces in Iraq (OCF-I), and they were commended on several occasions for their professionalism under fire by the OCF-I commander. The OCF-I commander never knew that "personnel clerks and fire direction specialists" accompanied his special operations Soldiers on these missions.

Like the QRF, the counterrocket platoon was also a huge success. This platoon was led by Staff Sergeant (SSG) Dale L. Horn, a radar NCO. Under his leadership, his platoon stopped all mortar and rocket attacks against the FOB for seven consecutive months.

Ironically, the success his platoon achieved in stopping the attacks had nothing to do with traditional methods of dealing with rocket and mortar attacks. SSG Horn used a different and very effective approach.

During our first three months in Iraq, we relied primarily on area denial through ground and air patrols and conducted counterfire in response to attacks, but the rocket attacks persisted. SSG Horn made the critical decision to spend less time driving around the desert looking for the elusive attackers and spend most of the time building relationships with the locals in the very small villages that bordered the FOB. These villages were small—literally a handful of mud huts—that we had neglected to engage. However, SSG Horn was so successful in building relationships with these locals that they pledged to *not* let any "outsiders" fire rockets or mortars at the FOB. Affectionately, SSG Horn became known as "Sheik Horn" to the locals, and all attacks against the FOB ceased.

We learned two important lessons from the success of the QRF and counterrocket platoons. The first is that with proper training and the right mind-set, there truly are no soft MOS. Every Soldier is a warrior and can be effective in conducting combat operations outside the wire. A commander must not overburden traditional maneuver units with too many tasks because he's afraid to use headquarters Soldiers.

Second, relationship building with the locals is a powerful weapon in COIN, and sergeants, who are closest to the action on the ground, are *excellent* at doing this.

We quickly learned that decentralized operations are essential for successful COIN. So we looked for creative ways to empower batteries.

One of the most powerful means TF Automatic had to influence the local population was the ability to let local commercial contracts and create jobs through our battalion civil affairs team (CAT). However, like most CATs, ours was overworked and often unable to meet the needs of the battery commanders. Therefore, we sent all maneuver platoon leaders to

a contracting course so they could augment the work of the CAT. This allowed battery commanders to execute small projects rapidly that had huge positive effects in their battery areas. This initiative also freed up the battalion CAT to focus on the larger projects.

Battalion-Level Considerations. There are several considerations for restructuring the fires battalion staff to operate better as a maneuver headquarters. The first is augmenting the S2 section. The brigade's infantry battalions had intelligence sections of seven Soldiers, most of which were augmented with at least five additional Soldiers for a total of 12 in an S2 section.

While our TF could not augment our three-person S2 section with nine Soldiers, we added four Soldiers for a total of seven in the section. The section's size was adequate but not optimal for the huge amount of information it had to process as well as ensure the TF's detainee packets were properly completed.

Another critical battalion position was the public affairs officer (PAO). Because the battalion adjutant was the tactical command post (TAC) platoon leader, the battalion chemical officer became the PAO. This "lucky" person wrote two articles per day, seven days a week, focusing on all the great things that the ISF accomplished. These stories included successful combat missions executed by the ISF as well as stories about the Iraqi Army (IA) basic training, NCO Academy and police training.

We sent these stories electronically to the brigade; the MultiNational Corps, Iraq (MNC-I); MultiNational Security Transition Command, Iraq (MNSTC-I); and MultiNational Force, Iraq (MNF-I). This increased the public relations exposure of our ISF and led to senior coalition leaders' recognizing our ISF's great work.

While, ultimately, the publicity led to additional resources for our ISF, even more importantly, many of the international press picked up the stories. Such coverage supported the strategic communications message that the ISF were improving and taking responsibility for security in their areas.

Winning the Trust and Cooperation of the Iraqis. The people who live in the local area are "the prize" in COIN. While most US military leaders intuitively understand this, it requires a level of patience many are not comfortable with

while conducting "combat operations." It also requires the application of a leader skill not often associated with combat operations: interpersonal skills.

It doesn't matter if a unit is trying to "win the hearts and minds" of the locals or just gain their trust and confidence, the unit first must focus its efforts on meeting the concerns of the people. These concerns range from security to basic services to jobs.

When we arrived in our TF AO, we found the AIF had built a "wall" between the Coalition Forces and the local people. The wall allowed the AIF to operate in a "sea of anonymity." The AIF do not need the popular support of the people; all they need is the people's silence. The AIF know that without information from the locals, it is difficult for US forces to target the AIF. US forces' conducting raids based on poor information only further alienates the local people.

The AIF "built the wall" and gained the people's silence using a three-pronged strategy. First, they employed information operations (IO) to discredit Coalition Forces. Second, they used CA operations to influence the people, to include providing money to

C Battery, TF Automatic, leaders conduct a monthly area security council (ASC) meeting for local sheiks, mukhtars, imams and mayors in Hadr, Iraq.

Soldiers from B Battery, TF Automatic, provide inner cordon security during a night cordon and "knock" mission used to search for and capture suspected anti-Iraqi forces (AIF).

mosques. Finally, they brutally intimidated any locals who cooperated with the coalition.

The TF's job was to "tear down the wall" and gain the trust and confidence of the local people. Many of the things we did helped establish a positive relationship with the local people, including initiating CA projects and conducting IO. But three activities were critical to gaining the trust and cooperation of the locals: communicating in security council meetings, using combat outposts (COPs) to protect the locals and exercising precision and restraint while conducting raids and cordon and searches.

Council Meetings to Communicate. Perhaps the most important way to reach the people was to gain the collective trust of local leaders: the sheiks, mukhtars, imams and, to a lesser degree initially, the mayors (over time, the mayors became more important).

Based on the advice of a close friend and advisor, Ali Attalah Malouh, an Iraqi Army battalion commander, we established a monthly Tigris River Regional Security Council (RSC) meeting for all the local leaders. Our first meeting took place in November of 2004. Twelve local leaders attended. By May of 2005, our average monthly attendance was between 400 and 500 sheiks, mukhtars, imams and mayors.

These RSC meetings grew so large and were so productive that we established area security council (ASC) meetings to communicate and collaborate further. The ASCs were held the week before the monthly RSC in five of our major population areas.

In conjunction with our daily lunches and dinners with individual local leaders, the monthly RSCs and ASCs provided an invaluable forum to connect with the local leaders and communicate our messages. We started each RSC with a five- to seven-minute video in Arabic, showing all the "good news" stories from around the AO. After the video, a prominent leader from the provincial government addressed "hot" issues, such as a lack of fuel, electricity or teachers' pay or problems with the food program, and then gave the local leaders the opportunity to address any concerns with their government officials. Next, local ISF leaders discussed security concerns, and then a local imam or mayor gave a short speech.

The TF commander was the last to speak. He recognized and presented certificates and coins to any sheiks who did not have any "wanted" individuals from their villages and presented Iraqi flags to family members of any IA soldiers killed in action. This public recognition was in addition to visiting the families' homes to express sorrow. Finally, the commander set aside 15 minutes for questions.

After the "formal" part of the RSC, which generally lasted about two hours, we loaded everyone on busses and reconvened at the 1st IA Battalion mess hall for lunch. It was during this lunch that most of the real business was conducted.

We set up several important stations at the lunch site to address individual issues and some concerns not discussed at the RSC. Over time, we learned that, generally, there were three areas of concern: the status of detainees, issuing weapons cards and the initiation or status of ongoing CA projects. Our TF S2 and the IA battalion S2 manned the station to answer questions about the detainees' status, the individual batteries set up stations to issue weapons cards to their trusted sheiks, and the CAT established a mini-CMO center (CMOC) to discuss current and upcoming projects.

Obviously, security for a meeting that large with that many prominent leaders was a *major* concern. Hence, we held the RSCs on the FOB and spent nearly two hours clearing everyone at the front gate and loading them on busses to get them to the morale, welfare and recreation (MWR) tent for the meeting. Because the meetings were so large, the Iraqi leaders understood the need for high security and always showed up early enough to allow us to start the meetings by 1000.

The ASCs were much smaller, more informal and run by the battery commanders. We generally had about 50 local leaders attend the ASCs and conducted them in the villages, usually hosted by a mayor or ISF leader.

COPs to Protect the Iraqis. As we gained the trust of the local leaders and that trust spread to the villagers, it was critical that we protect the people who worked with us. One of the best ways to protect the local population was to establish COPs in the worst areas.

The continuous and visible presence the COPs provided not only challenged the AIF's freedom of action, but, more importantly, showed the locals we were committed to their safety. As our relationships with the local leaders and villagers grew, so did the actionable information we received from them.

Applying Precision and Constraint in Cordons and Searches. Precision is based on knowing the intelligence is good (reliable sources), locating the target house or building accurately and knowing there is a high probability that the target is there. Restraint is using the minimum amount of force and firepower needed to protect TF Soldiers and innocent locals while detaining the target.

Most of our missions to capture suspected AIF were cordon and "knocks." Rarely did we use a mechanical breach or other forced-entry technique when entering a house.

Because of the enemy situation in our area, achieving surprise was the real challenge, not overwhelming firepower. If the platoon achieved surprise and established a good inner cordon, there was no reason not to knock on the door and make requests to the man of the house before clearing and searching it.

We followed some basic rules when conducting cordon and knocks. See the figure for the rules. Clearly, some neighborhoods and situations require a ballistic breach—stun grenades and forceful searches. The key is to know when that approach is necessary versus a cordon and knock.

If conducted properly, a cordon and knock will not only capture suspected AIF, but also can be a huge IO success

1. Allow the man of the house to put all the women and children in one room before clearing the house.

2. When searching the room with the women and children, make sure the man of the house is present.

3. Wherever possible, only use female Soldiers to search women. If that is not possible, use an electronic wand to check for weapons, cell phones and other evidence. The anti-Iraqi forces (AIF) use women to hide evidence.

4. Be careful not to cause unnecessary damage to a house while searching it. When done clearing and searching a house, it should look pretty much like it did before you entered it.

5. If you must detain the man of the house, do not do it in front of his family. Instead, take him out of sight of his family before flex-cuffing him and putting him in a vehicle.

6. If no males are left in the household to watch over the family once the man of the house has been detained, have a local mukhtar or sheik take responsibility for the family.

Rules for Cordons and "Knocks" that Show Respect for Iraqis and Their Property

for a unit. It is an opportunity for the unit to show the local villagers it is serious about doing its job and pursuing suspected "bad guys." At the same time, it demonstrates unit Soldiers are just as serious about respecting the people, their customs and their property.

By using precision and restraint and by respecting the locals and their property, the unit ultimately will gain the respect of the local villagers.

Partnering with the ISF. Our TF faced several challenges in developing IA leaders and battalions. In October of 2004, we inherited two IA battalions, both of which were manned by soldiers who had attended coalition-run basic training and were considered "solid" battalions.

However in November of 2004, both battalions disintegrated under pressure from AIF attacks. One IA battalion and three IA company compounds were destroyed completely, and all their equipment was stolen or destroyed. Less

than 50 of the 1,200 soldiers showed up for duty after the attacks.

However, by April of 2005, we had three fully manned IA battalions, all capable of independent operations and all battle-tested in direct firefights with AIF. Further, by December of 2005, two of these three battalions had assumed responsibility for their own AOs.

So what changed to make these units go from collapse to success? The fundamental change was the habitual partnering of IA companies with US platoons.

After basic and advanced training, the IA units were partnered with US platoons that did everything with them. They trained with the Iraqis, ate with them, conducted all operations with them and, in some circumstances, lived with them. The relationships the US platoons and IA soldiers developed and the confidence it gave the IA soldiers paid huge dividends. Additionally, our great Soldiers had the opportunity to show the Iraqi soldiers *what right looks like* on a daily basis.

A second challenge we faced in developing our IA leaders was their hesitancy to delegate to subordinate leaders. We had three extremely good battalion commanders; all were brave, dedicated and committed to providing security for the local people. However, they rarely delegated those tasks that should be delegated to their executive officers, command sergeants major or company commanders.

At first we treated the challenge as a training issue and tried to fix the problem through more training. But over time, it was clear the issue was cultural.

In my opinion, the Iraqi leaders I worked with viewed delegation as a sign of weakness. They viewed the world from a realist perspective, that everything is a zero-sum gain. So if they delegated important things to subordinate leaders and the subordinates were recognized as being successful, then that somehow diminished the power and prestige of the senior commander. Therefore, teaching IA leaders to delegate will take a long-term approach and will improve only as their long-held beliefs break down.

Most coalition leaders recognize their responsibility to help protect their IA commanders from lethal attack by the AIF. Combined with coalition support and security from their own troops, IA commanders can be difficult to kill.

As a result, I saw the AIF in our area employ a different tactic. To try to remove our best IA commanders, they

used character assassination. Their goal was to cause the coalition and the ministry of defense to lose confidence in their most effective IA commanders by making false accusations and spreading unfounded rumors against them. The AIF knew exactly "what buttons to push," which included alleged detainee abuse, corruption and abuse of power. Of course, none of the allegations were true.

We observed that if the AIF was unsuccessful in breaking the trust between the current coalition commander and the IA leader, the AIF would wait for the transition between units and redouble efforts immediately before the bonds between the IA leaders and coalition leaders were forged.

It is critical for us to not only protect our effective IA leaders from lethal attack, but also from character assassination.

It's been more than 18 months since TF Automatic returned from Iraq. During this time, I have reflected on the experience and read the new COIN manual, FM 3-24. The tactical principals laid out in the new manual are sound and, if properly applied, can yield positive results.

While our observations about the COIN fight in Iraq are time- and place-specific, I am convinced that our great Field Artillery Soldiers will continue to be Pentathletes as they provide world-class fire support for our maneuver brothers as well as perform the myriad of other missions they have been doing in Iraq and Afghanistan including serving as maneuver TFs.

Colonel Bradley A. Becker, Field Artillery (FA), currently is a student at the Army War College, Carlisle Barracks, Pennsylvania. He commanded Task Force Automatic, 2nd Battalion, 8th Fires (2-8 Fires), 1st Stryker Brigade Combat Team (SBCT), 25th Infantry Division, in Operation Iraqi Freedom (OIF) III in Mosul. Prior to his command, he was the Executive Officer for the Combat Arms Division of the Human Resources Command (HRC), Alexandria, Virginia. In the 172nd Separate Infantry Brigade (SIB) at Fort Wainwright, Alaska, he was the Executive Officer and S3 of 4-11 FA. He commanded C Battery, 2-8 Fires, at Fort Lewis, Washington. During Operation Desert Storm (ODS) in the Gulf, he was the Fire Support Officer (FSO) for the 1st Squadron, 2nd Armored Cavalry Regiment. He holds an MS in Political Science from Auburn University in Montgomery, Alabama, and is a graduate of the Air Command and Staff College at Montgomery.

COIN in the FACCC

I
n support of the War on Terrorism (WOT), the Field Artillery Captain's Career Course (FACCC) in the FA School, Fort Sill, Oklahoma, must produce an officer who can do it *all*—serve as a battery commander, fire direction officer (FDO), fire support officer (FSO) or in any other staff officer position. Graduates of the FACCC also serve in diverse WOT missions supporting a maneuver task force (TF), including information operations (IO), lethal and nonlethal targeting, civil-military operations (CMO), motorized infantry operations or even as an occasional battle captain in a maneuver TF main command post (CP).

By Major Scott A. Shaw, IN

The unit at Fort Sill in charge of the FACCC and dedicated to producing such a captain is F Battery, 1st Battalion, 30th Field Artillery (F/1-30 FA), a subordinate unit of the 428th FA Brigade.

FACCC—An Overview. In March 2006, the Assistant Commandant of the Field Artillery School ordered a complete redesign of the FACCC. This redesign created a course that prepares FA captains for full-spectrum operations, including high-intensity conflict (HIC), and, specifically, for current operations in WOT: counterinsurgency (COIN).

See the article "Rapid Redesign of FACCC: A Four-Week Process for Updating Courses for an Army at War," by Major Robert A. Krieg in the July-August 2006 edition of *Field Artillery*.

The FACCC currently is 20 weeks and includes more material to be "crammed" into the captains' heads than the time allotted should allow.

In the final block of the course, the captains serve as battery commanders in both COIN and HIC scenarios, conducting gun battery raids with cannon and rocket batteries, maneuver raids and convoy escort operations.

FACCC and COIN. The FACCC includes a 16-day block of instruction on COIN. The cadre creates the foundation for the instruction early by directing the captains to read Lieutenant Colonel John Nagl's *Learning to Eat Soup with a Knife*. This book shows how the British Army in Malaya created a "learning organization" 40 years ago.

The process for developing a learning organization is outlined in the book *Hope is not a Method* by General (Retired) Gordon Sullivan and Colonel (Retired) Michael Harper. These processes are targeting opportunity, collecting data, creating knowledge, distributing knowledge, developing short-term applications and turning them into long-term applications. The captains read this book during the gunnery instruction in preparation for the COIN instruction.

The FA School Command Historian then exposes the captains to the history of combined arms warfare and teaches them how to use history to pull lessons from the past that apply to the current fight.

The COIN block of instruction begins with a day of cadre-led presentations on how to conduct a battle analysis. In keeping with the Chief of FA's guidance to keep the course relevant, the captains study Operation Al Fajr, the Battle of Fallujah II in November 2004. The captains research the battle using a wide array of resources. During the last battle analysis, some captains even contacted the US Marine regimental commanders and the Army brigade commander who conducted the fight. The captains lead the battle analysis near the end of COIN instruction with minimal supervision from the instructors.

COIN instruction includes an overview of insurgency and COIN, focusing on the types and causes of insurgencies and the principles, paradoxes and imperatives of COIN, as outlined in *FM 3-24 Counterinsurgency*, the recently

published COIN field manual. The captains then watch and discuss the *Frontline* documentary "The Iraqi Insurgency" produced by Australian reporter Michael Ware.

Students also get an overview of IO. The FA School's Tactical IO Course (TIOC) is the baseline for teaching the tasks a TF FSO conducts for operations in Iraq and Afghanistan. The captains view the 2005 *Frontline* documentary "A Company of Soldiers" and discuss the IO of the 1st Battalion, 8th Cavalry (1-8 Cav) in south-central Baghdad as part of the 1st Cavalry Division's last tour in Iraq.

Each captain leaves FACCC with the knowledge to control not only lethal assets, but also the nonlethal assets at the task force and brigade combat team (BCT) levels in WOT.

The COIN block contains two practical exercises (PEs)—one set at the National Training Center (NTC) at Fort Irwin, California, and the other on Azerbaijan terrain created to facilitate a common scenario throughout the course. These exercises teach the captains how to target in COIN, conduct "steady-state" operations, conduct raids at the task force and battery levels, operate with the media and conduct engagements. The last task is executed on a daily basis by sergeants, lieutenants and captains in Iraq and Afghanistan.

Engagements in COIN are to influence the "center of gravity," the population. FACCC teaches the captains to conduct engagements to gain some progress on the intended outcome from the meeting. The captains are trained to plan and prepare for and execute engagements at the BCT, TF and battery levels. The execution of a COIN engagement is critical and can result in information success or "information fratricide."

Each day the captains read an article from a professional magazine, and a student leads the discussion the next day. (See the figure for the list of FACCC COIN readings.)

The course uses the Center for Army Lessons Learned (CALL) *COIN Reader* as the primary text. It is a collection of articles from *Military Review* focused on COIN.

By reading and discussing these articles, the captains understand the fluidity and changing nature of COIN. Furthermore, the analysis and discussion enhance the students' critical thinking skills.

Our Soldiers deserve leaders who can think on their feet and adapt to changing

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Introduction to COIN

- John A. Nagl, *Learning to Eat Soup with a Knife* (University of Chicago Press) 2005.
- Gordon R. Sullivan and Michael V. Harper, *Hope is not a Method* (New York: Random House) 1996.

Primary FACCC COIN Text

- Center for Army Lessons Learned (CALL) *COIN Reader*, dated October 2006; a collection of articles from *Military Review* found at http://usacac.leavenworth.army.mil/CAC/milreview/English/CAC-COINFILES/COINREADER_WEB.pdf.

Principles of COIN

- "Producing Victory: Rethinking Conventional Forces in COIN Operations" by Lieutenant Colonel Douglas A. Ollivant and First Lieutenant Eric D. Chewning, *COIN Reader*.

Kinetic Operations in COIN

- Interview with Lieutenant General John F. Sattler, "Second Battle of Fallujah—Urban Operations in a New Kind of War," *Field Artillery* (March-April 2006).

COIN Intelligence Preparation of the Battlespace (IPB)

- "Countering Evolved Insurgent Networks" by Colonel Thomas X. Hammes, *COIN Reader*.

"Information Operations (IO)

- "IO for 'Joe'" by Lieutenant Colonel Joseph F. Paschall, *Field Artillery* (July-August 2005).

Targeting in COIN

- "1-87 Infantry's Split-Focus Fires and Effects Cell" by Captain Nicholas J. Armstrong, *Field Artillery* (September-October 2006).

FA Battalion as a Fires and Maneuver TF

- "Making the Transition from FA Battalion Staff to Maneuver Task Force Staff" by Major Jeffery T. O'Neal, *Field Artillery* (May-June 2006).
- "3rd ID: 1-10 FA as a Maneuver and Fires Task Force in OIF III" by Lieutenant Colonel Robert H. Risberg, et.al., *Field Artillery* (May-June 2006).
- "*Battlekings* Return to Baghdad as a Maneuver Battalion: Doing More with Less" by Lieutenant Colonel Steven M. Merkel and Major John G. Clement, *Field Artillery* (July-August 2006).

COIN Techniques in Iraq and Afghanistan

- "Oil Spot Technique" by Captain James Spies, *Infantry* (March-April 2006).
- "Best Practices in a Counterinsurgency" by Kalev I. Sepp, Ph.D., *Military Review* (May-June 2005).
- "Winning the Peace" by Major General Peter W. Chiarelli and Major Patrick R. Michaelis, *COIN Reader*.
- "Principles, Imperatives and Paradoxes of Counterinsurgency" by Eliot A. Cohen, et.al., *Military Review* (March-April 2006).

FA Captain's Career Course (FACCC) Counterinsurgency (COIN) Readings. *Field Artillery* articles are online at sill-www.army.mil/famag/index.asp.

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conditions. Regardless of where a captain came from or where he is going, he must be able to accomplish varying missions that he may or may not have had specific training to conduct. By changing the FACCC for COIN and creating a student how-to-think mentality, FACCC gives FA captains the skills they need to accomplish their missions.

Major Scott A. Shaw, Infantry (IN), until recently was a Small Group Leader in the Field Artillery (FA) Captain's Career Course at the Field Artillery School, Fort Sill, Oklahoma. Currently, he is deployed to Iraq as the leader of a Military Training Team (MiTT). He commanded A Company, 2nd Battalion, 14th Infantry (A/2-14 IN), 2nd Brigade Combat Team (BCT), 10th Mountain Division in Abu Ghraib, Baghdad, during Operation Iraqi Freedom (OIF) from June 2004 to June 2005 and Headquarters and Headquarters Company, 2nd BCT, 10th Mountain Division, during its deployment to Afghanistan to train the Afghan National Army in 2003. He also has served as an Assistant S3 and Platoon Leader in 1-9 IN, 2nd Brigade, 2nd Infantry Division in Korea; and an Assistant S3 in 1-5 IN in Egypt and an Assistant S3 in 2nd Brigade, 10th Mountain Division, at Fort Drum, New York.

Military personnel examine the tail section of a scud missile shot down by an MIM-104 Patriot Air Defense missile during Operation Desert Storm (ODS). (Photo by Combat Camera)

Army IAMD:

The Future of Air and Missile Defense

By Major Thomas M. Genter, ADA

First priority is the creation of a coherent system-of-systems framework for conceiving, developing and deploying air and missile defenses [AMDs]…for integrating each element of its future AMD capabilities within an Armywide, joint and combined context.

Training and Doctrine Command (TRADOC) Pamphlet 525-93 Army AMD Concept, Appendix J "Joint Senior Seminar War Game" (JSSWG) (Welch Panel)

Future adversaries undoubtedly will employ asymmetrical tactics to exploit real or perceived US military strengths. Many nations lack the financial resources and scientific or technical capital to compete militarily with superpower nations, such as the United States.

In an attempt to gain parity, many are turning to relatively inexpensive weaponry as replacements for expensive fixed- and rotary-wing aircraft. Emerging aerial threats will be the most likely weapons employed by rogue nations and terrorist organizations, threats such as cruise missiles; reconnaissance, surveillance and target acquisition (RSTA) or attack unmanned aerial vehicles (UAVs); ballistic missiles carrying weapons of mass destruction (WMD); and even rocket, artillery and mortar employed UAVs. These surface-to-air threats will be used to attack, deny, delay and gather intelligence on US force dispositions and movements.

History has shown that the enemy has used these weapons against civilian populations. Some examples are the events of 9/11, Nazi Germany's bombardment of England by V-2 rockets during World War II and Saddam Hussein's scud missile attacks on Israel's population centers during Operation Desert Storm (ODS). These were nothing more than acts of terrorism. Ruthless dictators and radicals will continue to attack noncombatants

from the "third dimension" (air/space) as a means of blackmailing them into cooperation or deterring them from cooperating with coalition forces.

Does the use of the third dimension as an asymmetrical threat still sound unlikely or improbable? Unfortunately, given the current state of nuclear and missile proliferation by Iran and North Korea, chemical, biological, radiological and (or) nuclear (CBRN) missile attacks are more likely than not. Iran's demonstrated proficiency in missile technology (due in part to help from North Korea, China and Russia) is well known and rapidly increasing.[1]

A quick glance at today's headlines is a good indication of Iran's nuclear ambitions. Many Iranians see the development of a nuclear capability and the means for delivery as key enablers to support their goal of becoming a regional power. Iran's potential nuclear capacity combined with its current robust missile force deters hostile invasion because Iran can strike targets (military, civilian

and geopolitical) inside and outside its borders.

As far back as February 1999, then Iranian Defense Minister Ali Shamkhani declared, "Iraq would have undoubtedly not attacked us 20 years ago if we had then the power we have now—because of our deterrent power, Israel's threatening rhetoric against us has also decreased lately."[2]

Iran's emerging nuclear and missile capability represents the most significant threat to future stability in the Middle East. The only logical solution for countering these missile threats and preventing worldwide catastrophe is to develop a robust multisystem missile defense that is effective at defeating the entire spectrum of missile threats.

Lessons learned from ODS and Operation Iraqi Freedom (OIF) and recent joint analyses of current and future capability gaps have shown that the key to defeating current and future missile threats is an integrated AMD (IAMD) system of systems. This approach integrates existing and future Army, joint and coalition AMD weapons and forces into a distributed network that relies on a single command and control (C^2) architecture. The architecture is designed to exploit the capabilities of current and future AMD systems (see Figure 1).

Because multiple AMD systems with differing resources and mission sets are combined together, the AMD coverage of the operational environment is extended, and the maneuver forces and other critical assets are protected against an array of cruise and ballistic missiles, UAVs, rockets, artillery and mortars. As a result of the synchronization of AMD capabilities, the IAMD system of

systems will detect and prevent the WMD missile threats.

These enhancements will force rogue nations to yield to international pressure or face the consequences.

Today's AMD. Currently, many friendly nations employ ground- and sea-based AMD systems that operate as stand-alone stove-piped structures. These systems are not integrated with one another due to unique weapons systems' interfaces and operational architectures. Therefore, coverage by some Air Defense systems is limited and sub-optimized because the systems are not fully interoperable with other airspace surveillance targeting systems. These systems can share only imperfect target identification and surveillance data, which can't be used for targeting, and don't exploit data from non-organic radars.

For example, some Air Defense missiles rely solely on their major end items, such as launchers, radars, C^2 systems, etc., to track targets, conduct airspace surveillance, perform C^2 functions and destroy third dimension targets. Therefore, these missiles are limited to the range of their radars and the effects of terrain even though the missiles are capable of destroying targets outside of what the radars can see. Although these missiles may be capable of receiving data from other radars, the data only provides situational awareness and understanding, lacking the fidelity necessary for extended-range engagements.

AMD Enhancement Strategy. IAMD will replace the stove-piped systems with a single command, control, communications, computers and information (C^4I) system that can control multiple sensors and shooters at the same time. These developments are in three phases. See Figure 2 on Page 12 for the strategy to develop AMD capabilities. Increment I is in place with the current force.

Increment II of the IAMD will deliver a common net-centric AMD battle management command function with expanded integrated fire control (IFC) and extend AMD coverage to 360 degrees. For the first time, such an integrated system will link any

sensor to any shooter and allow engage-on-remote (EOR) and forward-pass target engagements. EOR employs one or more non-organic sensors to provide the fire control data needed to conduct the engagement.[3] Forward pass target engagement is a weapons system's ability to hand off the engagement by passing control of the interceptor to another system.[4]

IAMD will provide a wide area, multilayered defense to defeat aerial threats. This includes defeating targets with small radar cross sections (enemy rockets, artillery and mortars) or larger intercontinental ballistic missiles (ICBMs) employed at ranges inside or outside the atmosphere (endoatmospheric or exoatmospheric).

In addition to synchronized fires, IAMD will give the joint force commanders situational awareness and understanding by providing key airspace management data. By leveraging radar data from any joint, interagency, intergovernmental and multinational (JIIM) sensor, IAMD forms a common operational picture (COP) that fuses, correlates and integrates the JIIM data. One major benefit of a real-time integrated air picture is that fire control and launching station operators will be able to deconflict fires nearly instantaneously with confidence, significantly decreasing the potential for fratricide.

One of the greatest advantages of the system-of-systems developmental approach is the creation of an open architecture for dynamic force tailoring, scalability and "plug-and-fight" capabilities. By developing a "box" that interfaces with all other AMD major end items, the joint AMD force will be able to include or accept information from other civilian and coalition AMD assets.

A common interface into one standard AMD C^2 system will allow systems to process sensor and shooter data better, regardless of the individual weapon's hardware and software peculiarities. Other intelligence, surveillance and reconnaissance (ISR) systems built with IAMD C^2 interfaces will be able to share processes and transmit information with all AMD major end items.

As ADA develops other AMD weapons and counteraerial systems (i.e., directed energy), the systems will have a common interface, allowing them to plug into and operate with IAMD. This IAMD C^2 system will reduce costs by sharing common IAMD C^2 software

AMD Imperatives	Future Capabilities
• See First • Understand First • Act First • Finish Decisively	• Network-Centric Operations (System-of-Systems Common Operating Environment [SOS-COE] Compliant) • Mobile, Modular, Mission-Tailored AMD Task Forces • Integrated Fire Control (IFC) for Cruise Missile Defense • Joint Systems Interoperability

Figure 1: Air and Missile Defense (AMD) System-of-Systems Transformation. The system-of-systems approach integrates existing and future Army, joint and coalition AMD forces into a distributed network with a single command and control (C^2) architecture.
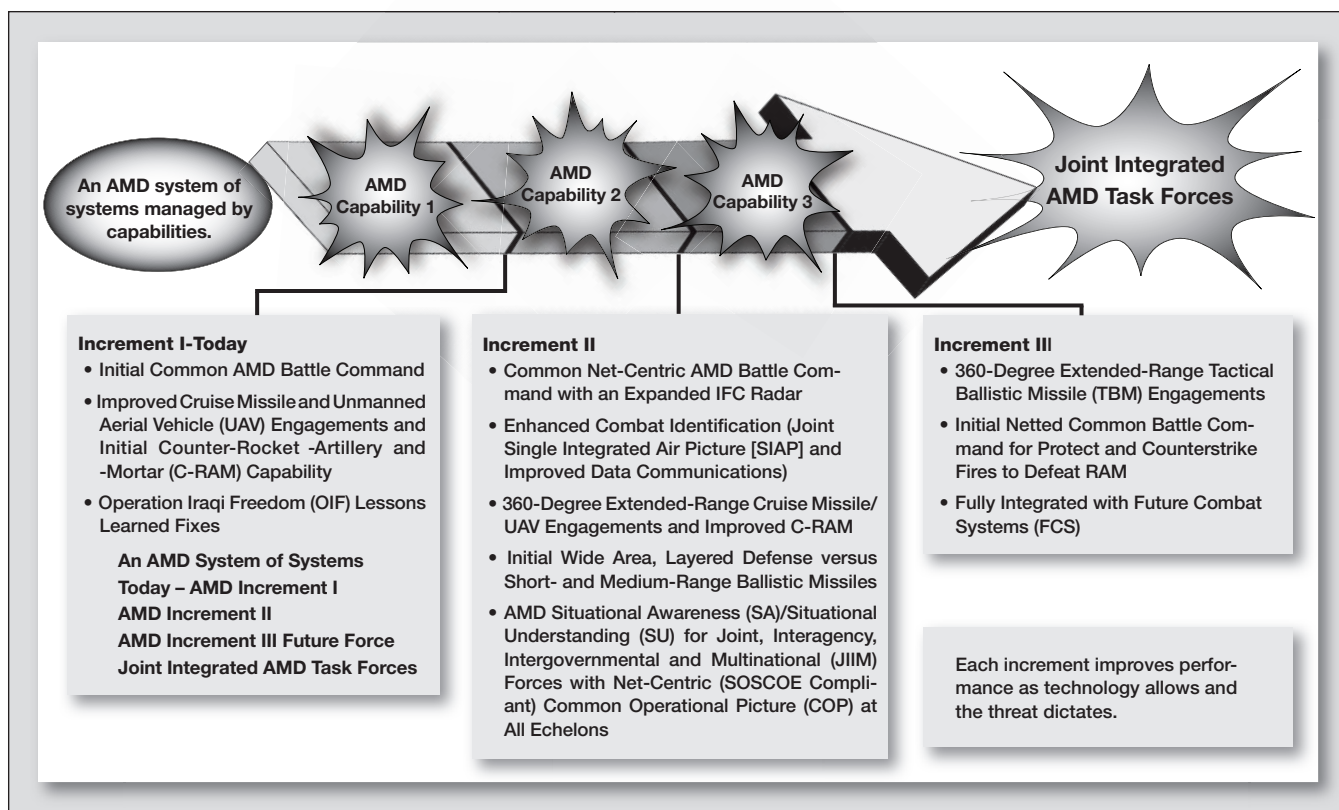
Figure 2: Army AMD Transformation Roadmap

and hardware and won't require a new military occupational specialty (MOS) or additional training.

How will current AMD systems plug into the network? One answer is to modify all AMD systems by adding a box or "universal translator" to convert the current operating language into a language understood by the AMD software or aerial sensors. Once the IAMD C^2 infrastructure is in place, a natural evolution would be to develop multi-functional launchers and sensors.

Multifunctional Launchers and Radars. These will enable an assortment of missiles to perform a variety of missions. Depending on the mission, the multifunctional launcher will be able to fire surface-to-surface or surface-to-air missiles after receiving fire commands and tracking targeting data from the IAMD C^2 system. Matching the right missile or interceptor to the target supports the concept of weapons target pairing.

Sensor multifunctionality is another idea that is easily supported by employing IAMD using a common C^2 backbone. Today's emerging technology promises to deliver radars that acquire targets to support three missions on one platform: Air Defense, air traffic control and counterfire. This multi-mission radar (MMR) will interface with the IAMD C^2 and transmit the data it collects to other systems interfacing with the network.

Still in its infancy, IAMD represents a bold and evolutionary methodology to systems engineering and acquisition strategy. It will lower life-cycle costs and reduce redundancies and inefficiencies inherent in current AMD weapons, each with its own sensors, C^2 and launchers.

Future AMD forces must extend the coverage of the current operational environment; be able to leverage radar data from any JIIM source; defeat, destroy and deter the entire aerial threat set; and negate the effects of aerial WMD. By implementing IAMD, the warfighter will own a force protection asset that is world class, tailor made, adjustable to meet individual mission requirements and capable of seamlessly accepting advancements in future technologies.

Major Thomas M. Genter, Air Defense Artillery (ADA), until recently, was the Executive Officer (XO) for the Directorate of Combat Developments (DCD) at the ADA School, Fort Bliss, Texas. Currently, he is at Fort Riley, Kansas, training to be the Battalion Team Chief for a Military Transition Team (MiTT) with the 1st Brigade Combat Team (BCT), 1st Infantry Division, in Iraq. His previous assignments include Officer-in-Charge (OIC) of an Air Defense Airspace Management (ADAM) Cell in the 3rd Stryker BCT (SBCT), 2nd Infantry Division, in support of Operation Iraqi Freedom (2004) and Commander of C Battery, 5th Battalion, 5th ADA (C/5-5 ADA), Fort Lewis, Washington. He attended the US Marine Corps' Marine Amphibious Warfare School at Quantico, Virginia. As an enlisted Soldier, he became airborne and air assault qualified, among other training and assignments.

Endnotes:
1. "Iran's missile program continues to depend on imports from China, North Korea and Russia, all of which have sold either missile equipment, technology, or expertise. These imports have helped Iran toward self-sufficiency in missile production." "Wisconsin Project on Nuclear Arms Control, Iran Missile Update 2004," *The Risk Report,* Vol. 10, Number 2 (March-April 2004). Available online at http://www.wisconsinproject.org/countries/iran/missile2004.htm.
2. Robin Hughes, "Long-Range Ambitions," *Jane's Defence Weekly,* Vol. 43, Issue 37 (13 September 2006), 22-27.
3. The definition of "engage-on-remote" is found in the "2010 Joint Theater Air and Missile Defense (JTAMD) Operations Concept" written by representatives of the Office of the Secretary of Defense, joint staff and military services, known as the Joint Theater Air and Missile Defense Organization (JTAMDO).
4. Training and Doctrine Command (TRADOC) Pamphlet (Pam) 525-3-01.94 The United States Army Air and Missile Defense Operational and Organizational Concept for the Future Force.

TAB in the Fires Brigade — FA and ADA?

The target acquisition (TA) battery or "TAB"—does anyone really know what it does? Everyone seems to want one, or at least a piece of one, but the value it could bring to the battlefield has yet to be realized fully.

It is important for the Field Artillery (FA) community to understand what a TAB does, what it can do and what it should do. It is equally important that our maneuver brethren understand a TAB's capabilities in much the same way they need to understand the effects brought to the battlefield with artillery delivery systems. In the future, the TAB needs to become the focal point of all acquisition systems, including emerging acquisition systems and Air Defense Artillery (ADA) TA systems being employed in Iraq today.

TAB Organization. Under the Army of Excellence organization, the TAB is composed of three AN/TPQ-36 and two AN/TPQ-37s Firefinder radars. It has an organic target processing element (TPE) and a headquarters element designed to sustain the battery independently of external organizational-level logistics. Figure 1 on Page 14 shows the proposed

By Major Jeffrey S. Schmidt, FA, and Captain John C. Mooney, FA

TAB organization in *Field Manual Interim (FMI) 3.09-24 The Fires Brigade.*

Its mission, as defined by *FM 3-09.12 Tactics, Techniques and Procedures for Field Artillery Target Acquisition,* is "locating enemy indirect fire weapons and registering and adjusting friendly artillery in the division's battlespace with sufficient accuracy and timeliness for attack by friendly units."

The three Q-36 radars frequently are detached from the battery and are direct support (DS) to their maneuver brigades, generally falling under the organic DS artillery battalions for command and control and logistical support. The Q-37s remain general support (GS) and work directly for the force FA (FFA) or counterfire headquarters for the area of responsibility (AOR) they fall within.

The TAB headquarters plays a far more active role in managing and supporting the division's GS acquisition assets during high-intensity conflict. However, in current, and more than likely in future

conflicts with non-contiguous battlespace, perhaps it is time to reconsider the concept of the TAB.

A TAB in Iraq—A Holistic Approach. From November 2005 through October 2006, D Battery, 1st Battalion, 94th Field Artillery (D/1-94 FA) served in Operation Iraqi Freedom (OIF) 05-07, providing GS radar coverage, primarily to Task Force (TF) Band of Brothers, part of the 101st Airborne Division (Air Assault), operating in MultiNational Division-North (MND-N). Because D/1-94 FA deployed without a battalion headquarters and was separated from both its 1st Armored Division maneuver brigades and division artillery, it fell under the 18th FA Brigade that served as the fires brigade and FFA headquarters for TF Band of Brothers.

The battery's five organic radars were spread across MND-N with the Q-36s covering 40,000 square kilometers and two Q-37s centrally located near the FFA and TAB headquarters. The radars were augmented with one additional Q-36 and Q-37.

With this setup, the battery supported many maneuver brigades across the
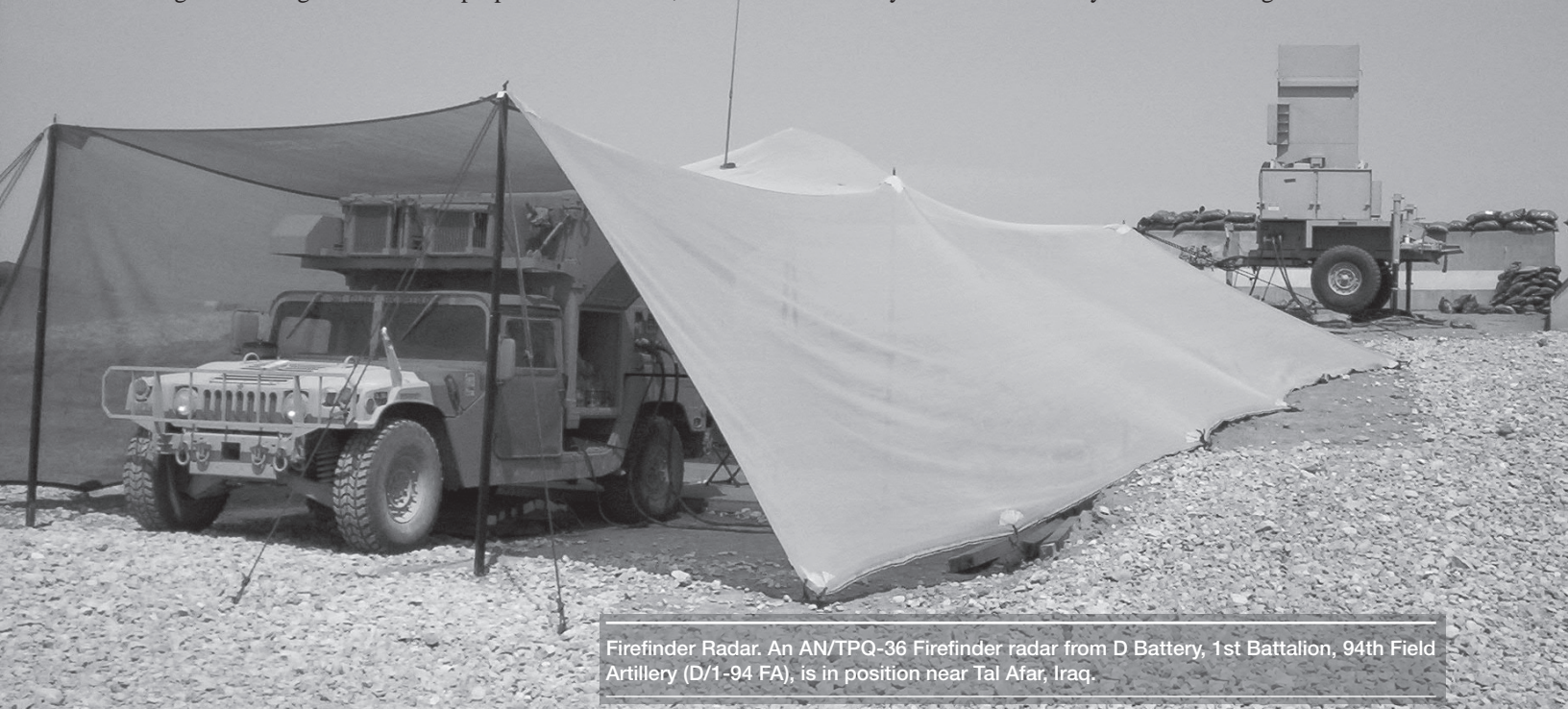
Firefinder Radar. An AN/TPQ-36 Firefinder radar from D Battery, 1st Battalion, 94th Field Artillery (D/1-94 FA), is in position near Tal Afar, Iraq.

The TAB provides—
- Radar coverage in support of division and corps counterstrike operations.
- Reinforcing radar coverage for brigade combat team (BCT) operations.
- Target area meteorological (Met) data support to organic and assigned fires battalions.
- Survey control to fires brigade radars and other users.
- The development and refinement of targets and suspected targets.

* From left to right, these numbers reflect the number of the officers-warrant officers-enlisted personnel followed by the total number of personnel.

Figure 1: The Target Acquisition Battery (TAB) in the Fires Brigade *(Field Manual Interim [FMI] 3.09-24 The Fires Brigade)*

area of operations (AO). At one point, the battery supported every brigade within MND-N: 1st Brigade Combat Team (BCT), 1st Armored Division; 172nd Stryker BCT (SBCT); 1st BCT, 101st Airborne Division; and 3rd BCT, 101st Division.

With the Q-36 and Q-37 Firefinder radars' being organic to the new BCTs, many would argue that the TAB no longer is needed. What purpose does the TAB serve? Clearly, a DS radar is situated best within its supported BCT.

However, because there was a deluge of emerging acquisition systems, the TAB assumed control of TA assets in the AOR in a holistic approach. Our allies in Germany, Great Britain and Australia, just to name a few, already have complemented their artillery locating radars with other sensor systems in a holistic approach.

One of the most noticeable challenges D Battery faced during its recent rotation in Iraq was a murky understanding of the roles and responsibilities of these emerging TA systems. Questions constantly arose: Who do they belong to? Who sustains them? Who controls their search pattern?

As a TAB, D Battery supported the fielding, operation and maintenance of many emerging acquisition systems in

theater. Among these systems were the Unattended Transient Audio Monitoring System (UTAMS), Lightweight Countermortar Radar (LCMR), Rapid Aerostat Initial Deployment (RAID)/Joint Land-Attack-Cruise-Missile-Defense Elevated Netted Sensor (JLENS), Counter-Rocket, -Artillery and -Mortar (C-RAM) acquisition assets and the Sentinel radar. However, nowhere in doctrine are these responsibilities spelled out. In some instances, there was great disparity among different forward operating bases (FOBs) in the use, proponency and support of these systems.

To streamline the use and maximize the readiness and results of these systems, it makes sense to consolidate division TA assets under a single headquarters that understands the doctrine, capabilities and intricacies of these systems and how to tie them together in a seamless TA network. What headquarters would be better than that of a TAB?

If the division integrates all TA systems at the BCT headquarters, the BCT staff lacks experience with the TA systems. On the other hand, a TAB has a senior NCO as the radar platoon sergeant who can mentor and train the young section chiefs and help the counterfire headquarters in the best use of these assets. Without

using the expertise of this senior NCO, the utility of the Firefinder radar may be diminished. The TAB brings to the battlefield the TA seniority, experience and technical capabilities to enhance the counterfire fight.

Because a TAB is a leadership-heavy battery, it is easy to manage the division TA assets in a decentralized environment, although D/1-94 FA employed a mix of centralized and decentralized control. Falling under the 18th FA Brigade for the majority of the deployment, D/1-94 FA managed its radars in a centralized fashion when it came to positioning, movement, employment and zones of sea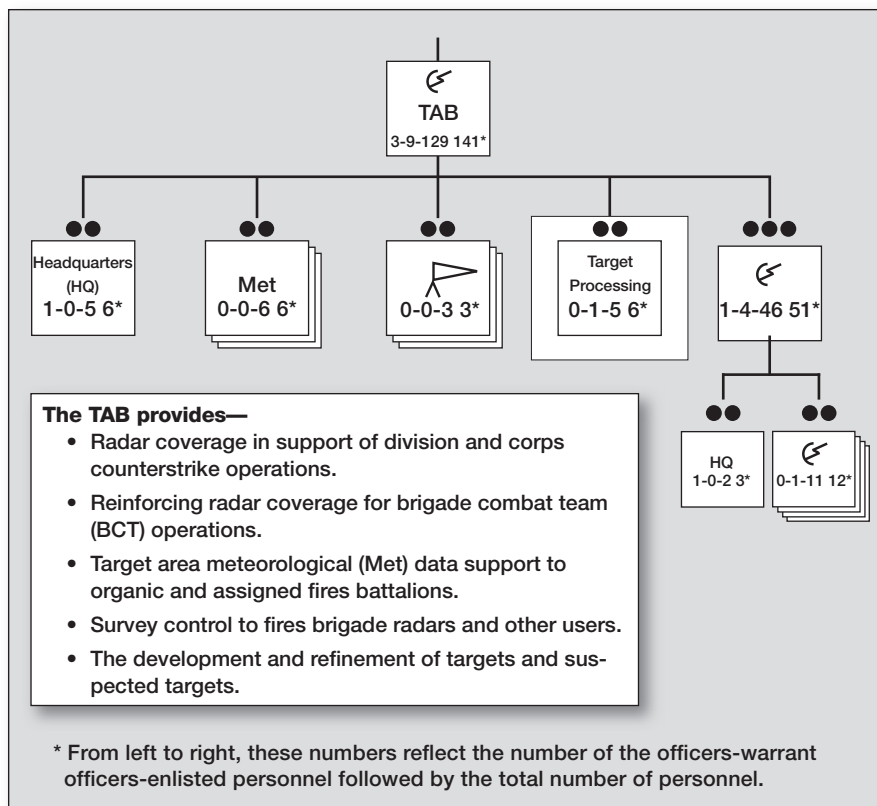rch. However, because of geographic dispersion, processing acquisitions was more decentralized with each system reporting its acquisitions through the closest maneuver brigade fires and effects cell (FEC) or battalion fire support element (FSE).

The brigade-level radars also fell under this centralized control, although the brigade commander has more leeway in the daily use of his DS acquisition systems. A common failing is that the maneuver commander does not have enough experience with TA systems and, thus, cannot employ them to their maximum potential.

It is up to Artillerymen to sell the merits of these TA systems and, consequently, make sound recommendations about what commanders should do with them. If acquisitions don't result in action, there is no purpose in acquiring targets.

The warrant officers serving as radar section leaders (soon to be serving only as TA platoon leaders) for brigade systems may be used best in maneuver battalion FSEs as targeting and counterfire officers, especially because the fire support coverage usually encompasses one maneuver battalion AO. They also could provide the maneuver battalion commander and battalion fire support officer (FSO) critical radar and counterfire experience and understanding.

In addition to daily radar maintenance and repairs, this would keep the warrant officers more than busy and prepare them for assignments as brigade counterfire officers (CFOs) or targeting officers. The career development plan for the Military Occupational Specialty (MOS) 131A Targeting Technician is now TA platoon leader, fires battalion targeting officer, BCT target analyst and BCT targeting officer. (See the article "FA 131A Warrant Officers: A Career Update" in the March-April *Field Artillery*.)

Additionally, as the Army is changing, proposals are on the table to combine the MOS 13R Firefinder Radar Operator, 13W Meteorological (Met) Specialist and 13S FA Surveyor into one MOS. Based on the new TAB realignment, this would create a situation in which any Soldier entering a TAB could end up in either a radar, survey or Met section. This versatility could prove beneficial, but, in fact, may overload incoming Soldiers because they need more training on the emerging acquisition systems—training they have received "on the fly" after arriving in theater and assuming control of the emerging systems.

Adding ADA to the TAB. The Army is realigning its divisions into modular combined arms brigades with maneuver, fires and effects, bringing overlapping FA and ADA in the fires functionality. In addition, the FA Center at Fort Sill, Oklahoma, and ADA School at Fort Bliss, Texas, are creating a Fires Center of Excellence (CoE) at Fort Sill.

ADA's mission is to protect the force and selected geopolitical assets from aerial attack, missile attack and surveillance *(FM 44-100 US Army Air and Missile Defense Operations)*, and it goes hand-in-hand with the TAB mission that involves protecting the force through counterfire. While ADA uses the AN/MPQ-64 Sentinel radar to cue Avenger or dismounted Stinger teams on hostile and unknown

aircraft, cruise missiles and unmanned aerial vehicles (UAVs) and provide air situational data to command and control centers, the FA uses Firefinders to locate enemy indirect fire weapons and provide timely counterfire on targets.

In the January-March 2006 edition of *Air Defense Artillery,* Lieutenant Colonel Christopher R. Mitchell, ADA, wrote the article "C-RAM Battery—[A] Proposal [to] Place Majors in Command of Air Defense Artillery's Counter-Rocket, Artillery and Mortar Batteries." In it, he advocates giving control of emerging acquisition and C-RAM systems to the ADA.

This would be a mistake. C-RAM should be an FA asset—operations in Iraq place most of the control of the C-RAM systems under the fires brigade, base defense operations center (BDOC) or TAB. Countering rocket, artillery and mortar attacks is not an ADA mission; it is an FA counterfire mission.

That being said, it does not mean that a future TAB should not include the proven Air Defense Sentinel radar and the newly fielded land-based Phalanx weapon being used in Iraq to shoot down incoming rockets.

While this may sound like one of the first "battles" between the two artilleries, our proposal could become one way for the two communities to merge as a part of the fires functionality. For example,
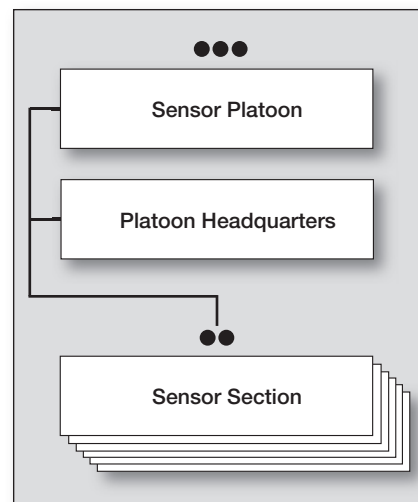
Figure 2: The Air Defense Artillery (ADA) Sensor Platoon. The sensor platoon would be part of the fires brigade's TAB and led by an ADA lieutenant. Each of the six sections has one Sentinel radar. (This figure was taken from *FM 44-48 Tactics Techniques and Procedures for the Sensor Platoon.*)

an ADA sensor platoon, consisting of six Sentinel radars, is part of an ADA battalion headquarters and headquarters battery; it should be moved into a TAB and led by an ADA lieutenant. This would add an ADA section to the TAB and be one opportunity for the two artilleries to work together, providing both FA and ADA coverage and creating a radar shield that encompasses both the ground and air. (See Figure 2.)

This combination truly would create the radar shield maneuver commanders *think* they have in their AOs. Also, it would create an organization that controls all TA systems, both air and land, allowing other FA and ADA batteries to focus only on firing their weapons systems.

Another reason for adding the sensor platoon to the TAB is that the TAB already has organic mechanics familiar with and able to fix the TA systems. MOS 94M Radar Repairmen receive training on the Sentinel radar and can be assigned to either a Firefinder TAB or an ADA sensor platoon.

During OIF 05-07, D/1-94 FA supported Sentinel radars as if the sensor platoon were part of the TAB. Under the current fires brigade organization, the only ADA officers are in the Air Defense Airspace Management/Brigade Aviation Element (ADAM/BAE). By adding the ADA sensor platoon to the TAB, it would help merge the branches' functions and make a single headquarters, the TAB, responsible for TA, the

Chief Warrant Officer Two (CW2) Jasbir Riat and Sergeant Don Grainger from D/1-94 FA troubleshoot a Q-37 Firefinder radar in Iraq.

C-RAM headquarters and the Sentinel to provide air and ground radar coverage of an AO.

Additionally, by bringing the ADA TA system into the TAB, it forces the corps ADA battalion to integrate into the fires brigade. This also helps merge the fires functionality of the two branches, promotes cooperation and knowledge about the two artilleries that make up the fires cell within the new maneuver, fires and effects functional alignment.

Overall, the TAB is alive and well, and it can support all TA systems (FA, ADA and emerging). The 13Rs that make up the majority of the TAB need more training on the emerging acquisition systems so they can man and maintain those systems as well as the Firefinder radars that support the C-RAM fight.

Putting emerging acquisition systems and Air Defense systems under the TAB would create an organization that can serve as the headquarters for all TA systems within a fires brigade. Eventually, this would lead to the corps ADA battalion's being added to the fires brigade, providing an ADA counterfire capability to the new fires brigade.

Major Jeffrey S. Schmidt, Field Artillery (FA), is the Commander of D Battery, 1st Battalion, 94th Field Artillery (D/1-94 FA), 1st Armored Division, in Idar-Oberstein, Germany. He deployed his target acquisition battery (TAB) to Iraq from Operation Iraqi Freedom (OIF) 05-07. He also deployed as 1-94 FA's Assistant S3 and the 1st Armored Division Artillery's S4 during OIF I. In the 1st Cavalry Division, Fort Hood, Texas, he commanded the 1st Cavalry Division Horse Cavalry Detachment, among other assignments.

Captain John C. Mooney, FA, deployed in OIF 05-07 as the Executive Officer (XO) of D/1-94 FA. Previously, he served as a Multiple-Launch Rocket System (MLRS) Battery XO, MLRS Battery Operations Officer and Fire Direction Officer and MLRS Firing Platoon Leader, all in 1-94 FA in Idar-Oberstein. He graduated from George Washington University, Washington, DC, with a BA in Journalism and Political Science.

ADA Editors Receive SECARMY Award

On 13 March, two Editors of the *Air Defense Artillery* (ADA) Bulletin from the ADA School, Fort Bliss, Texas, won the 2006-2007 Secretary of the Army (SECARMY) Editors of the Year, a Group (Departmental) award.

In a ceremony held at the Pentagon, William B. Case and Kathleen M. Doyle from the Office of the Chief of ADA (OCADA) received Editor of the Year award plaques in recognition of their editorial skills and initiative to reinstate the print version of *Air Defense Artillery* in 2006. The Armywide competition was judged by a Department of the Army Incentive Awards Board.

Awards were presented in the following categories: Publications Improvement (Command), Army Editor of the Year and Army Editor of the Year (Command). The awards ceremony was followed by a reception in the Executive Dining Room of the Pentagon.

The Secretary of the Army award recognized the two editors for superior writing and editing of Professional Bulletin 44 (PB-44), a publication tailored to the professional development of Air Defenders worldwide. The editors expedited the ADA School's reestablishing a print version of PB-44 as a Department of the Army PB, starting with the January-March 2006 edition. Jointly the two editors have devoted more than 60 years of active duty and civil service to the Army.

Although the resurgence of the printed version of *Air Defense Artillery* was short-lived (the final print edition was October-December 2006), Air Defenders will continue to benefit from professional development literature in this *Fires* Bulletin. *Fires* integrates the professional content of both the *Air Defense Artillery* and *Field Artillery* bulletins.

William B. Case and Kathleen M. Doyle, (center) receive the first of the Secretary of the Army 2006-2007 Editor of the Year plaques at the Pentagon on 13 March. On the far left is Assistant Secretary of the Army for Manpower and Reserve Affairs (M&RA) Ronald J. James, and on the far right is the Army's Deputy Chief of Staff, G1, Lieutenant General Michael D. Rochelle. (Photo by Lisa B. Henry, Office of the Chief of Air Defense Artillery)

THAAD

Accelerated Fielding

By Lieutenant Colonel (Retired) Scott E. Shifrin, ADA

On 4 July 2006, North Korea conducted test launches of a long-range ballistic missile and five shorter range missiles. The long-range Taepo Dong-2 missile, which is capable of hitting key strategic sites and allies in the region, failed after about 40 seconds. But firing that missile caused an international outcry and highlighted the need for providing missile defense capabilities as soon as possible.

On 15 July 2006, the Islamic Republic of Iran test fired the 1,350 kilometer-range ballistic missile named Shehab-3. This missile represents the most potent hardware in Iran's growing missile force. The first test of Shehab-3 took place in July 1998 with the missile exploding in mid-flight. Iranian sources have declared the second test of the missile a success.

But the greatest concern to date came on 7 October 2006 when North Korea announced it had tested a nuclear device, pushing the nightmare scenario of a rogue state armed with both nuclear warheads and missile delivery systems a step closer to reality.

In response, the Missile Defense Agency (MDA), headquartered in Arlington, Virginia, announced plans to expedite the fielding of the Terminal High-Altitude Area Defense (THAAD) system in coordination with the Army. THAAD will destroy tactical ballistic missiles (TBMs) at longer ranges and higher altitudes than Patriot, providing a high-altitude defense to complement Patriot's defense capabilities. THAAD's accelerated fielding schedule will place THAAD batteries in service by early FY10 rather than in 2012 as originally planned.

Flight Test 7 Success. MDA's director announced that the THAAD system successfully intercepted a TBM on 6 April 2007 at the Pacific Missile Range Facility (PMRF) off the island of Kauai in Hawaii. All flight test objectives were achieved.

This test involved intercepting a "high endoatmospheric" (just inside the earth's atmosphere) unitary (non-separating) target representing a "scud"-type ballistic missile. The scud was launched from a mobile platform positioned off Kauai, simulating a realistic threat. The interceptor was launched from the THAAD launch complex at the PMRF.

The primary objectives of Flight Test 7 were to prove the interceptor's ability to identify the target and discriminate the type of target, select an aim point and hit-to-kill (direct hit) the target. One of the secondary objectives was to determine the system's "usability"—assess the Soldiers' ability to operate THAAD. The Soldiers had no advanced warning as to when the scud would be launched, enhancing the operational realism of the test. THAAD includes a launcher with eight interceptors, an X-Band radar and the THAAD fire control and communications (TFCC) system.

The THAAD test program is "three-for-three" in recent intercept tests. Flight Test 7 was the second test of THAAD at PMRF since the equipment was moved from White Sands Missile Range (WSMR), New Mexico, in October 2006. For the first time, Soldiers of the 6th Air Defense Artillery (ADA) Brigade from Fort Bliss, Texas, operated all equipment during the test, conducting launcher, TFCC and radar operations. Their interaction with the complete THAAD system provided valuable test and operations experience for the Soldiers and contributed to the operational realism of the test.

Building THAAD Batteries. The Army recently announced that the first two THAAD batteries will be assigned to the 32nd Army Air and Missile Defense Command (AAMDC) at Fort Bliss. New equipment training (NET) for key Army personnel is scheduled to begin this year. "Building a unit" is the "name of the game" for the THAAD team as it prepares to integrate Soldiers, equipment and training to form a deployable THAAD combat capability.

The THAAD Project Office and its industry teammates are preparing for the production of two THAAD firing batteries. Each battery will have three launchers, 24 interceptors, an X-Band radar and a TFCC system. The batteries also will have Army standard equipment, such as trucks, individual weapons and generators. Each battery will have four platoons: headquarters and maintenance, launcher, radar, and a fire control and communications platoon.

Once equipped, the units will have NET and participate in operational testing to assess and refine THAAD warfighting tactics, techniques and procedures (TTPs). With appropriate revisions to tactics, the fully trained battery will be evaluated for combat readiness. Once testing and developments are complete, the THAAD battery then will be added to the list of deployable units ready to fight America's battles.

This process, which normally takes five or more years, is projected to be completed in less than three years. The reduction in time is due to MDA's and the Army's spiraling capabilities into the system and implementing initiatives to conduct training and testing as efficiently and effectively as possible. These initiatives will allow MDA and the Army to achieve the Department of Defense (DoD) mandate to provide warfighters a limited emergency THAAD capability for temporary periods as soon as possible.

The Value of THAAD. THAAD is the first weapons system to operate in both the endoatmosphere and exoatmosphere (outside the atmosphere). It was developed to defend against short-, medium- and immediate-range ballistic missiles. These are regions and threats America's potential enemies are working to exploit. THAAD will provide high-altitude missile defense over a larger area than its complementary Patriot system and will use hit-to-kill technology to destroy the enemy missile. THAAD supports both theater and strategic missile defense missions.

Specifically designed to defeat the mass raid of ballistic missiles, THAAD is uniquely capable of countering a large number of threats while providing the warfighter with flexible employment options. THAAD does not replace Patriot but, instead, complements it as well as the Navy's Aegis ballistic missile defense system, the Ground-Based Midcourse Defense (GMD) system and various sensors throughout the world to provide a multilayered defense against ballistic missile threats.

MDA's ballistic missile defense system that is being developed and tested will provide a layered ballistic missile defense in all phases of flight for the US homeland, US deployed forces, friends and allies.

Eyes on the Horizon. Beginning in January 2008, Soldiers will form the nucleus of the first THAAD battery and will arrive at Fort Bliss to begin training.

They will provide the first deployable battery in 2009.

MDA recently added funding for two more THAAD batteries, one to be fielded in 2012 and one in 2013.

The combined MDA and Army team is pioneering solutions to field a complex weapon system rapidly, a team that very well could become the model for accelerating future DoD programs. The THAAD system, in concert with Soldiers, soon will begin defending America and her allies against enemy ballistic missiles, both here and abroad.

Lieutenant Colonel (Retired) Scott E. Shifrin, Air Defense Artillery (ADA), is the Terminal High-Altitude Area Defense (THAAD) Deputy Project Manager for Transition, Manufacturing and Fielding at Huntsville, Alabama, which is part of the Missile Defense Agency (MDA). His previous assignments include serving as the Product Manager for the Surface-Launched Advanced Medium-Range Air-to-Air Missile (SLAMRAAM) System and the Stinger Missile System in the Program Executive Office (PEO) for Missiles and Space at Huntsville; Department of the Army System Coordinator (DASC) for the Hellfire/Longbow/2.75-Inch Rockets/Common Missile Program at the Pentagon; and Executive Officer for the Program Director of National Missile Defense (NMD) in the Joint Program Office, also at the Pentagon. He has more than nine years of Army operational experience. He holds an MBA from Southwest Texas State University at San Marcos.

Terminal High-Altitude Area Defense (THAAD) Launcher

Fires Author's Guide

A bimonthly joint magazine, *Fires* is the professional magazine for US Army and Marine Corps Field Artillery (FA) and US Army Air Defense Artillery (ADA) professionals worldwide. Approximately 40 percent of our readership is company-grade, both officer and enlisted, with the remaining 60 percent more senior Army and Marine personnel, Department of Defense (DoD) civilians, retirees, members of other branches and services, allies, corporate executives and our political leaders.

In addition to articles, we routinely print the Chief of Field Artillery's/Chief of Air Defense Artillery's column (Fires—Mud to Space), letters-to-the-editor (Fires from the Field); interviews with Army, joint and combined leaders; and other features.

Subjects. Articles may cover the tactical, operational or strategic levels of military operations as long as their contents relate to FA, ADA, joint or coalition fires and effects or are of special interest to our readers.

If an author is writing about the past, he should analyze the events and show how they apply to the FA and or ADA professional today—not just record history. If he's identifying current problems, he must propose solutions. (An author may identify problems without proposing solutions only in a letter-to-the-editor.) In addressing the future, he should clearly explain his points and their implications.

One of *Fires'* objectives is to serve as a forum for professional discussions among the FA, ADA and fires community members. Therefore, an author's viewpoint, recommendations or procedures don't have to agree with those of the Branches, Army, Marine Corps or DoD. But the article's contents must be logical and accurate; address disadvantages as well as advantages (as applicable); promote only safe tactics, techniques and procedures (TTPs); and include no classified or operational security (OPSEC) information.

An article must be clear and concise with its thesis statement (bottom line) up front and the body of the article systematically contributing to the thesis.

When writing, an author must think like the FA and ADA professionals in the field: "What is it?" "What will it do for me?" and "How do I implement it?" (or "When will I get it?").

Submissions. Include—

• A double-spaced, typed, unpublished manuscript, between 3,000 and 3,500 (or less) but no more than 5,000 words, including endnotes as appropriate. Authors should check their articles' contents with unit commanders or organization directors or S2s/G2s to ensure the articles have no classified or OPSEC information in them. Except in the case of Armywide "news" items, *authors should not submit a manuscript to* Fires *while it is being considered elsewhere.*

• A comprehensive biography, highlighting experience, education and training relevant to the article's subject and credentialing the author as the writer of the article. Include email and mailing addresses and telephone, cell and Fax numbers. Please keep this information current with *Fires* for as long as we're considering the manuscript.

• Graphics with captions to illustrate and clarify the article. We accept high-resolution digital images (about 1 MB or more each). These can include photographs, drawings, slides, maps, charts, unit crests, etc. (See the "*Fires* Digital Photo Shooter's Guide" in this magazine and online at sill-www.army.mil/firesbulletin/index.asp for more information.)

The *Fires* staff will edit all manuscripts and put them in the magazine's style and format. The author of an article and interviewee will receive a copy of the edited version for review before publication.

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• Call us at DSN 639-5121/6806 or commercial (580) 442-5121/6806. To Fax, dial the DSN or commercial prefix and 7773.

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Fires
Submission Deadlines

Edition	Deadline
Jan-Feb	15 Oct
Mar-Apr	15 Dec
May-Jun	15 Feb
Jul-Aug	15 Apr
Sep-Oct	15 Jun
Nov-Dec	15 Aug

Young Pakistani girls wait for distributions from Save the Children at Maira Camp, Pakistan, 16 January 2006. The US military participated in the Pakistani-led relief operations for victims of the devastating earthquakes that struck the region on 8 October.
(Photo by TSgt Joseph McLean, USAF)

NGO–

Military Relations in Iraq and Afghanistan: Some Guidelines

Stability operations are a core US military mission that the Department of Defense (DoD) shall be prepared to conduct and support. They shall be given priority comparable to combat operations and be explicitly addressed and integrated across all DoD activities, including doctrine, organizations, training, education, exercises, material, leadership, personnel, facilities, and planning.

US DoD Directive 3000.05 Military Support for Stability, Security, Transition and Reconstruction (SSTR) Operations 28 November 2005

By Beth Ellen Cole and Emily Hsu

For every member of the US armed forces, understanding how to conduct stability operations is no longer a luxury but a necessity. This means that each member of the US armed forces needs to understand the multiple actors in their theater of operations, including nongovernmental organizations (NGOs).

The diversity of actors in these complex emergencies has created substantial confusion in operations on the ground, particularly between the military and the NGO community.[1] The absence of overarching guidelines

targets in places such as Iraq and Afghanistan. Many of these NGOs receive monetary support from the US government, principally through the US Agency for International Development (USAID) in Washington, DC, or receive voluntary contributions from the American public. This makes them potential targets for terrorists or "bad actors" in places such as Iraq and Afghanistan.

For NGOs across the board, the "humanitarian space" they traditionally have enjoyed to conduct humanitarian relief in less hostile environments is under attack. Many experts believe the concept of humanitarian space has shrunk or, perhaps, disappeared altogether in these insecure places. In Iraq and Afghanistan, for example, the US military, under the rubric of provincial reconstruction teams (PRTs), is involved in reconstruction activities traditionally executed by humanitarian relief organizations—activities such as building schools and clinics or delivering humanitarian relief.

The US Institute for Peace (USIP), Washington, DC, is working to resolve NGO-military issues and establish guidelines for NGO-military operations in the same regions of the world. USIP is an independent, nonpartisan, national institution established and funded by the US Congress. Its goals are to prevent and resolve violent international conflicts; promote post-conflict stability and democratic transformations; and increase peace-building capacity, tools and intellectual capital worldwide by empowering others with knowledge, skills and resources as well as by its direct involvement in peace-building efforts around the globe.

According to a report issued by USIP in 2005 on NGO-military relations in Afghanistan, "Civilian humanitarian assistance providers believe that they cannot allow their efforts to be perceived as part of the campaign plan of a belligerent force because the 'humanitarian space' they need to perform their work will be compromised, and the lives of relief workers and those they assist will be placed in jeopardy."[2] A "bull's-eye" adorns every individual or organization operating in these environments, whether it is conducting offensive, defensive or humanitarian and reconstruction operations.

Several other factors add to the confusion about US military and US civilian personnel. For example, many US contractors in Iraq are armed by the private security firms they work for,

which creates the false perception that all civilians on the ground act as instruments of US foreign policy, including foreign NGOs. Additionally, combatants are not easily recognizable to US servicemen by military uniforms and gear; insurgents can pose as members of the civilian community, even as representatives of NGOs.

Finally, these operations are called "stabilization and reconstruction" missions for a reason. The military is conducting nation-building and stabilization operations simultaneously, which creates added confusion as to the military's precise role. US forces may be engaged in provincial reconstruction activities during the day and conduct offensive operations in the same province at night. Hence, insurgents may associate anyone who has a relationship with the military in the context of this dual role as collaborating with the "enemy."

In many circumstances, an actor might think he is bearing instruments of peace, not war, such as water, food, bridge-building supplies and windows for schools; but each also can be viewed as having other motives. Herein lies the problem. The actors affect operations on the ground that affect the relationship between the NGOs and the military and, ultimately, affect the very people that each is trying to help—the local population.

Increased threats to US entities in the post-9/11 world and the simultaneous conduct of stabilization and reconstruction activities have compelled American actors to try to understand each other and seek new guidelines for operating in these challenging environments.

NGO-Military Working Group. On 8 March 2005, the heads of major US humanitarian organizations and US civilian and military leaders met at USIP to launch a discussion on the challenges posed by operations in combat and other non-permissive environments. A working group on civil-military relations in non-permissive environments facilitated by USIP was created as a result of this meeting. The working group focuses on NGO-military doctrine and best practices; information and communications; and training, education and planning.

The challenges in Afghanistan and Iraq led members of the working group to seek a deeper understanding of their respective roles and responsibilities in these environments. InterAction, the umbrella organization for many US

or a code of conduct between these two actors puts both parties at greater risk and jeopardizes the success of the overall mission.

The Challenges. States emerging from conflict where US forces are engaged in both combat and peacekeeping provide the perfect backdrop for opponents of the US government. Conventional targets have expanded from the US military to include any individual or organization remotely perceived to be supporting the goals of the US in stabilization missions.

Reflecting this trend, US NGOs involved in humanitarian and reconstruction activities are becoming greater

Iraqi employees work to construct a water treatment facility in Baghdad, Iraq. The US Agency for International Development (USAID) funds this project and will send $520 million toward water and sanitation projects that will benefit more than 11 million Iraqis. These projects will contribute a critical piece to the future potable water needs of the citizens of Baghdad.

NGOs, coordinated the nongovernmental delegation. The InterAction delegation includes agencies such as Cooperative for Assistance and Relief Everywhere, Inc. (CARE), Catholic Relief Services, International Medical Corps, International Rescue Committee, Mercy Corps, Refugees International, Save the Children and World Vision. DoD representatives on the NGO-military working group include members of the Joint Chiefs of Staff (JCS), the State Department and USAID.

Months of dialogue allowed the members to address growing concerns about the roles of NGOs and the military in non-permissive environments and enabled the development and agreement of guidelines to minimize confusion and help clarify the roles of military and civilian personnel. After finalizing the guidelines later this year, the working group will act as a forum for implementing the guidelines and for discussing and resolving concerns that will arise in various operations.

The working group also will continue to promote understanding in civil-military relations by improving doctrine, training and education for both military and NGO civilian personnel. That understanding can be parlayed to influence the operations of every serviceman and nongovernmental humanitarian worker—a worker who also risks his life serving in Iraq and Afghanistan.

The NGO Perspective. The NGOs in the working group shared the core principles that guide their work. They urged that pre-deployment education and training of all military personnel include three basic sources to help servicemen understand the operations of NGOs in complex environments: "Civil-Military in Complex Emergencies" by the Interagency Standing Committee, 2004; "The Code of Conduct for the International Red Cross and Red Crescent Movement and NGOs in Disaster Relief" by the International Federation of Red Cross, 1994; and "Humanitarian Charter and Minimum Standards in Disaster Response," The Sphere Project Handbook, 2004.[3] (The endnote provides the online locations of these three sources for pre-deployment training.)

The following are excerpts from the NGO-military working group's July 2005 briefing paper in reference to the documents.[4]

1. Civil-Military in Complex Emergencies. "Humanitarians derive their motivation from the humanitarian imperative. This imperative reflects the right of those affected to protection and assistance—as enshrined in international humanitarian law (IHL) and, in particular, the Fourth Geneva Convention and the Additional Protocols. The 'right' to protection and assistance (immunity from attack) is based upon the noncombatant status of civilian populations.

"Anything that serves to obscure the distinction between combatant and noncombatant groups undermines the right of noncombatants to protection under IHL and, thus, undermines the ability of humanitarian agencies to safely and effectively access populations in need. Security of humanitarian action rests upon trust and acceptance by relevant parties.

"We all recognize the importance of perception, regardless of the actual reality. Inaccurate perceptions can result in suspicion, mistrust and, potentially, attack of humanitarian workers. These have a detrimental impact on access to populations and security. Examples include extreme War on Terrorism (WOT) operations, [such as those in] Afghanistan and Iraq, but also Darfur.

"To deal with the problems that can arise through associations between the military and humanitarian actors in conflict settings, the Interagency Standing Committee adopted in June 2004 the reference paper 'Civil-Military Relationship in Complex Emergencies.' The Interagency Standing Committee was established by the UN General Assembly in 1992 to coordinate responses to disasters. The members are the UN agencies that engage in disaster response, such as the World Food Program, the UN High Commissioner for Refugees, UN International Committee on Emergency Relief (UNICEF), and the Office for the Coordination of Humanitarian Assistance. In addition, the International Federation of Red Cross and Red Crescent Societies, the International Organization for Migration and three NGO coalitions, including InterAction, participate in [Interagency Standing Committee] deliberations."[4]

2. The Code of Conduct for the International Red Cross and Red Crescent Movement and NGOs in Disaster Relief. "The Code requires NGOs to respect the humanitarian imperative, which states that humanitarians must provide assistance wherever it is needed. It requires compliance with the principles of independence and neutrality. These stipulate that aid should be given regardless of the race, creed or nationality of the recipients and without adverse distinction of any kind. Aid priorities must be calculated on the basis of need alone.

"Humanitarian assistance will not be given as a political or partisan act. Signatories will not act as instruments of the foreign policies of donor governments. They will never be used to gather information of a political, military or economically sensitive nature for governments or other bodies that may serve purposes other than those that are strictly humanitarian."[5]

3. Humanitarian Charter and Minimum Standards in Disaster Response. Finally, the NGOs urged the military representatives to observe The Sphere Project's minimum standards in disaster response when providing aid in occupation and "last resort" scenarios. The Sphere Project is an initiative that began in 1997 by the Red Cross and Red Crescent movement and a coalition of humanitarian NGOs.

Important information merged in the form of the 2004 Sphere Handbook. Core principals that govern humanitarian activities are enshrined in the charter—most notably the right of affected populations to protection and assistance.

Minimum standards for disaster assistance in five critical sectors are detailed in the handbook: water supply and sanitation, nutrition, food aid, shelter and health services.

The Military Perspective. The military representatives also strove to be understood during the discussions in the working group. The US armed forces are stretched thin and not looking for additional responsibilities. The military sees its primary role in the challenging transitional period from war to peace as providing security, not trying to take over the NGOs' missions.

In frank exchanges, government representatives stated that while they normally were not interested in doing humanitarian and reconstruction work that others could accomplish more effectively, sometimes operations to "win the hearts and minds" (or at least the cooperation) of the local population are conducted when ordered by responsible political authorities. The military wants to learn more about NGO needs and capacities and to establish better coordination mechanisms to minimize and manage the inherent difficulties in stabilization and reconstruction missions.

NGO-Military Guidelines. These deliberations led the representatives of the working group to begin drafting a set of guidelines. Perhaps nothing reflects more accurately the frank discussions and challenges of non-permissive environments than the guidelines themselves. While adherence to these recommendations for conduct is voluntary, the guidelines represent the first-ever agreed-upon statement between NGOs and the military to deal with non-permissive environments since the US entered Afghanistan and Iraq. Every US combatant command, the Office of the Secretary of Defense (OSD), the Joint Staff, DoD lawyers and the NGO delegation all have thoroughly vetted the guidelines.

Both the NGOs and US armed forces will endeavor to adhere to these "rules of the road" but also recognize that certain circumstances may force actors to deviate from them. In these circumstances, the parties also have pledged to make every effort to explain why a deviation occurred so that transparency can be achieved to minimize distractions from the task of helping the population in need. The hope of the working group is that the guidelines will serve to help those in the field who interact on a daily basis.

While these principles emerged from discussions held by US NGOs and the US

military, the working group recognizes that there are many non-US actors in the field who face the same challenges. With a final review of the guidelines underway at the time of this publication, the working group plans to reach out to other international, regional and state military institutions and (or) organizations and respective NGOs to expand the dialogue.

Key parts of the voluntary guidelines, although subject to slight changes, are summarized in this article. Participants of the working group adopted the term "US armed forces" to describe the US military and "nongovernmental humanitarian organizations," or "NGHOs," to describe NGOs for purposes of the guidelines.

Separation of NGHOs and Military Activities. These guidelines are to ensure the local population does not have a false perception of the autonomy of the NGHO and military operations.

• To address the need to firmly separate the identities of combatants from noncombatants involved in relief activities, the participants agreed that military personnel should wear their uniforms to distinguish them from NGHOs and that the US armed forces should also refrain from displaying any logos that belong to NGHOs on their clothing, vehicles or equipment.

One incident in Afghanistan where US military personnel wore civilian clothing while conducting relief activities brought the issue of clear identification for the local population into sharp relief for the NGOs.

• NGHOs should follow a similar prescription and avoid wearing military-style clothing, although participants agreed this

does not extend to protective vests and helmets that are clearly distinguishable from military issued items.

• Participants agreed that any visits by US armed forces to NGHO facilities should be coordinated in advance and that NGHOs should be offered the opportunity to meet with US military personnel outside of military bases or other military installations. This was due to the heightened sensitivity of NGHOs' being seen as collaborating with combatants, which can lead to several more prescriptions.

• NGHOs (except liaison officers, or LNOs) should not ride in military transport or have facilities collocated with the military, and NGHO activities at military bases or with military forces outside the bases should be held to a minimum. Visits to military installations should be coordinated in advance.

• US armed forces are asked to refrain from describing NGHOs as "force multipliers" or "partners" or any other characterization that might lead to questions about the NGHOs' independence in the eyes of the local population. One phrase used by a senior US official that described NGHOs in Afghanistan as "force multipliers" struck a nerve because it implied that NGHOs operate as part of the US government. The specific phrase was prohibited in the draft guidelines.

• Under extreme circumstances, an NGHO might ask for military protection for its aid convoys or use logistics support that only the military can provide. NGHO personnel might seek help in evacuating from a hostile environment or for medical treatment.

• Both parties recognize that some NGHOs may choose to cooperate with the military; however, that cooperation

Photo by Photographer's Mate 1st Class Ted Banks, USN

Representatives of the International Red Cross from Geneva, Switzerland, arrive at Kandahar International Airport, Afghanistan, to check on the well being of the al Qaeda and Taliban detainees being held there during Operation Enduring Freedom, 24 January 2002.

should be carried out in a manner that does not jeopardize the independence of the NGHO community as a whole.

• The participants agreed that the military should not interfere with NGHO relief activities with parts of the local population that the military may view as "unfriendly." This guideline affirms the core principle of humanitarian assistance—the right of affected populations to protection and assistance. Non-permissive environments, by definition, include both "friendly" and "unfriendly" elements.

Coordination of NGHOs and the Military. The first set of guidelines attempt to clearly separate the activities of the NGHOs and military. Yet some forms of coordination are required as well to minimize the risk of confusion in these settings and to deconflict military and humanitarian assistance programs. The NGHOs and military agreed that some form of coordination is necessary before and during operations.

• In the planning phase, NGHOs should send a small number of LNOs to meet with military personnel at the regional combatant commands and continue that representation through the conduct of an operation. For example, an LNO was sent to the US Central Command (CENTCOM) during the first six months of the war in Afghanistan. In addition, with an NGHO serving in a coordination role, some form of mutual access to NGHO and military assessments via a US government website or via an identified UN website is recommended.

• In the field, procedures for coordination are necessary also. NGO LNOs should be able to participate in unclassified military security briefings. To facilitate humanitarian assistance and the security of personnel engaged in these operations, information should be shared about security conditions, humanitarian activities and population movements, the locations of mines and unexploded ordnance, and other potential hazards to NGHOs. In addition, NGHOs should have access to information about medical facilities and evacuation plans.

• If USAID or the US State Department's Office of the Coordinator for Reconstruction and Stabilization are in the field, they potentially can serve as bridge institutions. The UN Humanitarian Coordinator, who already serves as a bridge between all NGHOs and the host government, typically can fulfill this role. US armed forces and NGHOs need

• NGO Coordination Committee in Iraq (NCCI): www.ncciraq.org. NCCI is an independent initiative that coordinates neutral aid efforts in Iraq and provides a wide forum where NGOs can exchange information on humanitarian activities and policy decisions.

• Agency Coordinating Body for Afghan Relief (ACBAR): www.acbar.org. ACBAR is an umbrella organization representing 97 NGOs from the national and international humanitarian, reconstruction and development community in Afghanistan.

• Relief Web: www.reliefweb.int. ReliefWeb is the global hub for time-critical humanitarian information on complex emergencies and natural disasters.

• InterAction: www.interaction.org. InterAction is the largest alliance of US-based international development and humanitarian NGOs.

• International Committee of the Red Cross (ICRC): www.icrc.org. ICRC is an impartial, neutral and independent organization whose exclusively humanitarian mission is to protect the lives and dignity of victims of war and internal violence and to provide them assistance.

Selected Nongovernmental Organizations (NGOs) Conducting or Impacting Activities in Iraq and Afghanistan

organizations that can serve as bridges in these environments.

The absence of regular dialogue and information sharing clearly has hurt the goal of helping populations at both the field and strategic levels. At the strategic level, the working group on civil-military relations in non-permissive environments will continue both the dialogue and implementation of the guidelines.

The end product should be a greater understanding between the key actors who work in these complex environments and more effective assistance to the population with reduced risk to all involved. This is not something that will be accomplished overnight but will take the perseverance and patience of both the US armed forces and NGHOs in Iraq, Afghanistan and future environments where they undoubtedly will work side by side.

Endnotes:
1. The US Institute of Peace (USIP) is publishing an update to its comprehensive *Guide for Participants in Peace, Stability and Relief Operations* in June 2007, online at www.usip.org.
2. "Provincial Reconstruction Teams and Military Relations with International and Nongovernmental Organizations in Afghanistan" by Michael J. Dziedzic and Colonel Michael K. Seidl (USIP Special Report, September 2005).
3. The Interagency Standing Committee's reference paper, "Civil-Military Relationship in Complex Emergencies," 28 June 2004, is online at http://ochaonline.un.org/mcdu/guidelines. The International Federation of the Red Cross' "The Code of Conduct for the International Red Cross and Red Crescent Movement and NGOs in Disaster Relief," 1994, is online at http://www.ifrc.org/publicat/conduct/index.asp. The Sphere Project Handbook, "Humanitarian Charter and Minimum Standards in Disaster Response," 2004, is online at http://www.sphereproject.org.
4. Unpublished InterAction briefing paper for the Civil-Military Working Group in Non-permissive Environments, July 2005.
5. Unpublished summary of the 27 July 2005 meeting of the Civil-Military Working Group in Non-permissive Environments, USIP.

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The German AD/AAAD Training Center—

German Air Defense (AD) School at Rendsburg

A Competence Center for the German Armed Forces

By Brigadier General Wolfgang Koepke, Chief of German AD

The German Army's Air Defense Artillery (ADA) School in Rendsburg, Germany, is not only its northernmost Army ADA garrison, but also its most northern branch school. In the course of establishing the modern German Army in 1956, the ADA with its respective school emerged. The location for the "ADA Barracks," as it was called, is today's Feldwebel-Schmid Kaserne in Rendsburg.

While the school's parent unit is based in the traditional garrison town of Rendsburg, the Air Defense/All-Arms Air Defense (AD/AAAD) Training Center is at the Todendorf Firing Range and Putlos Major Training Area. The AD/AAAD Training Center is used by German Army, Air Force and Navy ADA units.

The AD School. The primary task of the Army AD School is to ensure the in-depth training of current and future Army ADA officers and NCOs. The training includes not only branch-specific information, but also leadership development, civic education, military law and methodology. The school also oversees the combat developments of the branch in the areas of concepts, force structure, training, armament and equipment.

In contrast to other branch schools, the Army AD School provides all the training facilities, weapons and target simulation systems necessary for AD gunnery. Another distinction is that the Army AD School is the only *Bundeswehr* training facility that conducts AAAD training courses in support of the armed forces—even aerial target live fires. This is why the Army AD School has become the competence center for not only ADA and the AAAD, but also for the German armed forces.

The Army AD School maintains an international exchange of information and lessons learned by contacting and corresponding with counterpart branches, schools and soldiers of al-lied and friendly forces. For instance, the German Army AD School and the French Artillery School in Draguignan have maintained an association for many years. However, the true measure of what AD allies learn from each other happens during the training courses at the Army AD School when international officers and soldiers train together.

Training Ranges. The school is located across three garrisons. This is the result of live-fire restrictions imposed by the German government. The To-dendorf and Putlos ranges, which face the Baltic Sea, are the only live-fire ranges allowed.

The primary use for AD Firing Range Todendorf is to conduct practice firing with all kinds of AD Army and all-arms AD weapons. The six firing sites on Todendorf range have a maximum of 14 battle positions each and are on the coastline.

Soldiers' and leaders' training at the Putlos Firing Range include embedded tactical situations and practice (dry)

and live firing on aerial and ground targets.

Aerial target firing is performed with the aid of sleeve targets, towed bodies and drones equipped with automatic hit indicators (real-time) as well as specific radar/laser-detectable helicopter silhouette targets. Fixed- and movable-silhouette targets and hard targets serve as ground targets.

Army AD School. Just like the other German Army branch schools, the Army AD School has four main organizational elements: school headquarters, instruction/training division, combat developments division and a support group. To fulfill its mission, the school staff currently includes some 510 soldiers and approximately 160 civilian employees. This permanent staff is busy with training and teaching activities in three training companies with 13 classes, combat development missions and various support tasks.

Currently, the Army AD School offers 12 career courses (for sergeant candidates), 65 specialty courses (for unit leaders) and various other courses (e.g., Airspace Control). The year 2006 marked the school's completion of 111 courses, educating and training some 2,200 participants from the *Bundeswehr* as well as allied and friendly forces.

For teaching and training purposes, the Army AD School uses the same major end items employed by the units. The self-propelled armored AD system Gepard 1A2, light AD system, AD airspace surveillance radar and Marder armored infantry fighting vehicle for all-arms AD are but a few of these shared major end items.

These items are complemented by far more than 100 unique exhibits and prototypes. This collection documents the technical development of Army AD and all-arms AD in the German armed forces.

Using major end items for hands-on training is necessary but expensive. Simulator-based training is becoming more important because it costs less. In this context, the requirement for training to be readily available to maintain proficiency in the latest procedures must not be underestimated. Simulator-based training brings the added advantage of relieving the ecological impact of major-end-item training. The Army AD School has assumed a leading role in the use of training simulators for AD batteries using the light surface-to-air missile battery training and simulator

AD Battery Training Simulator. This system is the nucleus of the simulator-based training for Gepard crews. Gepard is a self-propelled armored AD system.

device and the dome training facility for Stinger man-portable AD (MAN-PAD) gunners.

AD System Central Training Facility. The latest achievement in teaching and training is the AD System Central Training Facility established using existing infrastructure and personnel. This facility meets the demands of the modern AD battle: the fight for seconds in reconnaissance and identification and the engagement of various hostile aerial assets. The components of the AD systems train the required skills, including reconnaissance, command and control (C^2), fire control and weapons operations.

This trainer, called the Army AD Surveillance and Command and Control System (AADSACCS), interlinks the individual elements, exercising the system of systems. Using AADSACCS in the AD System Central Training Facility, soldiers can train on their combat control systems using simulators and (or) their original equipment. This facility has become an essential element of course-based training and increasingly is used to train decision-making during operational troop and leadership development courses.

Combat Developments Division. The Combat Developments Division is concerned with the future Army AD within the most probable mission spectrum, primarily joint and combined operations. In this context, the first priority is adapting armament and equipment and procedures for the defense against future

and even asymmetrical air threats. The division's essential objectives are improving network-centric warfare in joint operations with Air Force, Navy and allied forces in addition to developing the conceptual and technical requirements for a new AD weapons system.

In the medium-term, a new AD system will replace the current AD weapons, sensors and the C^2 assets. With far more efficient effectors, sensors and C^2 assets, the AD system will be able to cope with future threats, particularly very small targets. Fully capable of network-centric warfare, the new system will become an integral part of ground-based AD.

Another task of the Combat Developments Division is to improve the protection of forces during operations, forces that are subject to the threat of rockets, artillery and mortars (RAM) by irregular forces. In the near future, weapons already being designed may offer the possibility of increasing the protection of friendly forces from RAM. Current systems are being tested for their suitability. The counter-RAM capability must be realized as soon as possible.

The Future. The path toward the "New German Army" with regard to organization, force structure, deployment and equipment is associated with fundamental changes for the ADA. The combination of all AD forces into one major formation—Air Defense Brigade 100—will be abandoned in favor of a mission-oriented C^2 approach.

The five active AD battalions equipped with the Roland self-propelled armored AD missile systems were disbanded as the weapons system was phased out. The AD is reorganizing with a new objective force structure that reduces personnel strength significantly.

In the future, the Army ADA will consist primarily of two formations: one regiment in the response forces and one battalion in the stabilization forces. Additionally, four units will be assigned to other major formations, three of which will be independent units.

The Army AD School is going to change its structure as well. At the end of 2009 and throughout 2010, the school will abandon the Rendsburg garrison and move to Munster. As a consequence, the 345-year garrison history will come to an end. However, the Todendorf and Putlos garrisons will remain.

From 2010 on, the Army AD School will form a new central training facility in Munster in cooperation with the Armor School and the soon-to-be-established Army Reconnaissance School.

These changes are significant to the Army AD School. But the future is bright, and change offers new opportunities. In this New German Army, the new Army ADA Training Center will definitely remain the *Competence Center of a Modern Branch of Service*.

Brigadier General Wolfgang Koepke is the Chief of the German Army Air Defense (AD) and Commandant of the German Army AD School in Rendsburg, Germany. In 2004, General Koepke commanded the 9th German Operational Contingent of the Stabilization Force (SFOR) and was Chief of Staff for the SFOR, both assignments in Sarajevo. Also in Bosnia-Herzegovina, he commanded the Army AD Brigade 100. He served as AD Branch Chief for the Federal Ministry of Defense in 2001 where he also had served as the Assistant Branch Chief. In 1992, he commanded the 12th Armored AD Gun Battalion in Hardheim. He began his military career in the *Bundeswehr* in 1973.

History of the German Army ADA Barracks

During World War II, the German *Wehrmacht* used the Air Defense Artillery (ADA) Barracks in Rendsburg, Germany, to train women antiaircraft gun auxiliaries. From 1945 to 1953, British and Norwegian occupation forces used it and called it the "Kingsway Barracks." In the years following and until 1956, parts of the barracks accommodated displaced persons and refugees.

Then on 7 July 1956, a ceremonial parade marked the establishment and the permanent location of the German Army's AD School. However, less than a year later, the school was appropriated by the Air Force and turned into a joint training facility for the Army, Air Force and Navy. This era lasted until 6 October 1964 when the facilities were returned to the Army ADA and designated the Army AD School—a name that remains today.

Although the name signifies the branch school, the practice of joint, multi-service and organizational training has never died. Recognizing the benefit to all soldiers, AD and all-arms AD weapons training continues, regardless of service affiliation.

Today we proudly can say that nearly 4,000 students from the German Air Force and Navy have received training on the former Roland weapon system. Roland is a self-propelled armored AD missile system.

The AD Todendorf Firing Range dates back to 1952 when the British armed forces established a firing range in the Hohwachter Bucht (Hohwacht Bay) on the Baltic Sea. As early as one year later, the range was extended by US forces and, henceforth, has been used by American, British, Canadian, French, Belgian and Danish AD formations as NATO's AD firing range.

It was not until 1957 that the *Bundeswehr* established its headquarters on the site and finally took control of the range in 1962. Since 1967, the former Division B of the Army AD School, the predecessor of the Air Defense/All-Arms Air Defense (AD/AAAD) Training Center, has been the major user of the AD firing range.

AD Todendorf Firing Range on the Baltic Sea

"Plug 'n Play"

MLRS Platoon Packages for BCTs

B Battery, 3rd Battalion, 13th Field Artillery Regiment (B/3-13 FAR), in support of the 42nd Division Artillery, fires the Guided Multiple-Launch Rocket System (GMLRS) unitary in Tikrit, Iraq, during Operation Iraqi Freedom, 25 May 2006. (Photo by SPC Gul A. Alisan, 55th Signal Company, Combat Camera)

Since its fielding in 2005, the Guided Multiple-Launch Rocket System (GMLRS) unitary rocket (XM31) has been used in support of Operations Iraqi Freedom (OIF) and Enduring Freedom (OEF). This extremely effective precision-guided munition (PGM) brought several fires battalion commanders from the 75th Fires Brigade at Fort Sill, Oklahoma, to relook how to fight the MLRS battalion in the contemporary operating environment (COE) under the guidance of the brigade commander.

PGMs aren't new—they've been around for some time. But with GMLRS unitary, for the first time, ground force commanders have a surface-to-surface PGM to support Army tactical formations. This and other technologies, such as precision target location advancements, are revolutionizing the way we deliver responsive precision rocket fires in support of division and brigade combat team (BCT) commanders.

This article does not focus on tactics, techniques and procedures (TTPs) to employ a GMLRS unitary rocket or how to attach an independent MLRS platoon package to a BCT. Rather, it introduces the concept of how to provide responsive precision rocket fires to support ground maneuver.

By Lieutenant Colonel John A. Kelly, FA

Platoon Structure. Today's modular BCT-centric Army is more lethal, agile and able to deploy rapidly to any theater of operation. The MLRS battalion, however, is only modular in that it has an attached forward support company (FSC) to conduct level-two maintenance and battalion-level sustainment operations supported by a dedicated brigade support battalion (BSB).

The MLRS battalion still has three batteries, each with six launchers per battery (3 x 6), and deploys as a battalion consisting of 539 personnel and 242 combat vehicles. This footprint would be significant in a BCT's area of responsibility (AOR).

So we set out to determine whether or not we should change the existing MLRS modified table of organization and equipment (MTOE) or tailor an exportable package to provide precision GMLRS unitary to a BCT commander. The package design would be based on mission, enemy, terrain, troops, time available and civilian considerations (METT-TC).

We contemplated a two-launcher M270A1 platoon manned with 22 personnel. But at this phase of the

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Operational Environments
- Linear & Contiguous
- Linear & Non-Contiguous
- Non-linear & Contiguous
- Non-Linear & Non-Contiguous

Types of Fires
- Close Support of Maneuver
- Suppression of Enemy Air Defenses (SEAD)
- Counterstrike
- Interdiction
- Shaping Operations

Support Relationships
- Direct Support (DS)
- Reinforcing (R)
- General Support Reinforcing (GSR)
- General Support (GS)

Command Relationships
- Organic
- Assigned
- Attached
- Under Operational Control (OPCON)
- Under Tactical Control (TACON)
- For Administrative Control (ADCON)

Figure 1: Multiple-Launch Rocket System (MLRS) Platoon Package—Four Perspectives for Analysis. The challenge was to determine how to configure MLRS platoons to provide full-spectrum, responsive fires to brigade combat teams (BCTs)—including Guided MLRS (GMLRS) unitary fires.

concept development, we thought it was best to stay with the current structure of two platoons in each of the three batteries, each platoon with three launchers for a battalion structure of 6 x 3. Our reasoning was that we could resource the battalion's 6 x 3 platoons better than we could a battalion with a 9 x 2 platoon structure without exceeding our current MTOE authorizations. Whatever the number of platoon formations, we would have to augment each with a liaison officer (LNO) section, maintenance support team, and medic and communications specialists.

Analysis from Four Perspectives. Additionally, we analyzed employing MLRS packages from four perspectives: operational environments, types of fires, support relationships and command relationships. (See Figure 1.)

Operational Environments. First, MLRS units must be able to provide rocket and missile fires in support of ground-based maneuver across the continuum of the linear and contiguous operational environment (Cold War scenario) to the non-linear and non-contiguous operational environment (OEF scenario). (See Figure 2.) We

recognized that at the high-intensity end of the spectrum, the volume of fires is high in a counterstrike battle while at the other end of the spectrum, the volume of fires is low where precision is paramount.

Types of Fires. Due to MLRS' precision and the ability to limit its footprint with the GMLRS unitary rocket, MLRS now can provide all five Field Artillery (FA) fires shown in Figure 1—close support, suppression of enemy air defenses (SEAD), counterstrike, interdiction and shaping fires. Previously, MLRS was not considered a weapon of choice for close supporting fires because it was primarily an area weapon system. That begs the question, "How best can we configure the formation to provide all types of fires responsively to the division and brigade commanders?"

Supported Relationships. As far as supported relationships are concerned, there is no change. MLRS still can provide reinforcing (R), general support reinforcing (GSR) or GS fires. However, the GMLRS unitary rocket allows MLRS to fire in support of troops-in-contact (TIC) as we have seen in the Central Command (CENTCOM) theater of operations.

Command Relationships. MLRS bat-

talions are either organic or assigned to fires brigades but also can be attached (with prior coordination) for classes of supply (Class I, III, V, and IX). So, ultimately, the real challenge is packaging a GMLRS unitary capability to support operations across the full spectrum.

Plug 'n Play Package. The result of our analysis is what we have nicknamed the "Plug 'n Play" concept. The package is an MLRS platoon (plus) attached to a BCT to provide the BCT rocket fires. The platoon package consists of 33 Soldiers and 13 vehicles. (See Figure 3 on Page 30.)

Due to the unique maintenance requirements of the M270A1 launcher, we included a small maintenance team as the BCT is not resourced to conduct repairs on the loader-launch module (LLM). The remaining platoon augmentees consist of a communications specialist, medic and liaison team to help the BCT fire support element (FSE) employ and coordinate GMLRS unitary fires. Under this configuration, the platoon is attached to the BCT, which is responsible for providing all classes of supply, I through IX.

Platoon Testing. The initial concept was tested during a battalion-run pla-
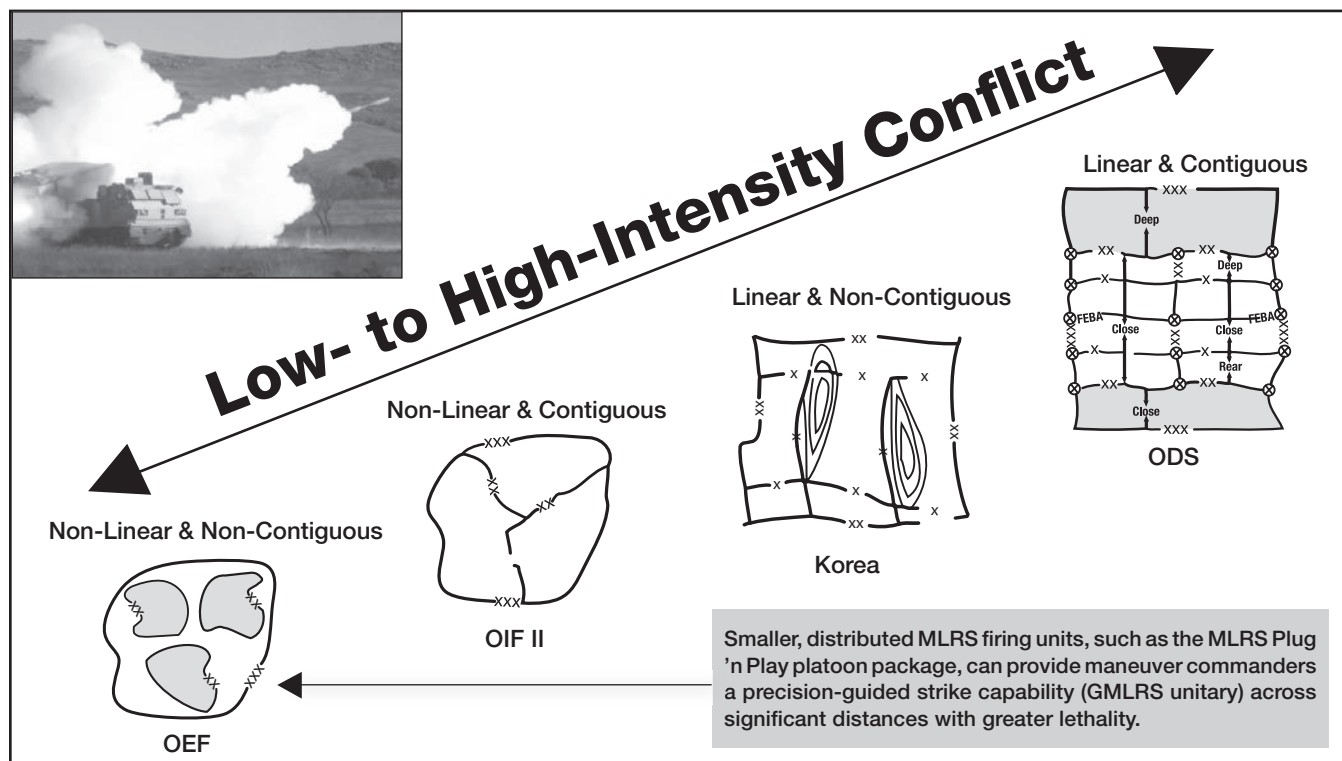
Figure 2: Spectrum of Operational Environments for the MLRS Plug 'n Play Platoon Package. With the advent of GMLRS unitary and the reconfiguration of the MLRS battalion into platoon packages, commanders can employ precision MLRS fires across the operational spectrum. This includes in close support on the lower end of the spectrum, such as in Operations Iraqi Freedom (OIF) and Enduring Freedom (OEF), as well as at the higher end of the spectrum, such as in Operation Desert Storm (ODS).

toon lane certification. Each of the six MLRS platoons were organized as independent GMLRS unitary platoons.

The Plug 'n Play GMLRS platoon concept was tested further at Fort Stewart, Georgia, during the 2nd BCT *Trojans,* 3rd Infantry Division, mission readiness exercise (MRE) from 17 February through 15 March. Initially, the platoon was to be attached to 2nd BCT and GSR to 1st Battalion, 9th FA Regiment (1-9 FAR). However, due to the limited training area and the fact that both the 4th and 2nd BCTs were in the field simultaneously, the 2nd BCT's AOR was smaller than the minimum range of the XM31 rocket.

Therefore, the simulated 52nd Infantry Division issued a fragmentary order (FRAGO) to the 2nd BCT, 3rd Infantry Division, to reflect the GMLRS platoon under the operational control of (OPCON) the 2nd BCT and GS to the 52nd Division to facilitate GMLRS unitary engagements within the 52nd Division's AOR.

The platoon conducted several missions from Forward Operating Base (FOB) Trojan and three off-FOB missions where Task Force 1-9 FAR provided a gun-truck platoon for security. All missions were received and processed in a timely manner, and the BCT fully supported the GMLRS unitary platoon with all classes of supply.

The key to the success of the GMLRS unitary platoon was an aggressive LNO team that integrated the platoon into the BCT targeting process.

Challenges and Refinement. The biggest hurdle the Plug 'n Play platoon had to overcome was convincing decision makers of the capabilities of both the XM31 rocket and the MLRS platoon without a live-fire demonstration. The platoon leader achieved this by briefing the BCT leadership, including video and storyboards from GMLRS unitary engagements in OIF and OEF. In time, the platoon leader proved the MLRS' capabilities and enabled the BCT to set conditions for GMLRS unitary rocket fires down range.

That being said, the burden on the platoon leader was far greater than anticipated, and therefore, we augmented the LNO team with a lieutenant and 13P MLRS Operations Automated Tactical Data Systems Specialist. This refined GMLRS package deployed in support of the 4th BCT, 3rd Infantry Division, rotation at the National Training Center (NTC), Fort Irwin, California, from 15 March to 15 April.

New Mission—Close Support. The guided unitary MLRS rocket is the Army's only surface-fired, all-weather, precision, longer range (up to 70 kilometers) indirect fire munition immediately available to the BCT commander for TIC. This is significant, considering the rules of engagement (ROE) and requirement for minimal collateral damage effects in the current theater of operations.

An MLRS battalion now can provide close supporting fires. The MLRS always has been thought of as an area weapon system where one launcher with multiple aim points could neutralize everything in one square kilometer. Thus, MLRS earned the nicknames of "Grid Buster" and "Steel Rain." That is still the case, but with the addition of GMLRS unitary, MLRS launchers give commanders another option to engage targets when the tactical solution calls for precision munitions.

We owe it to our division and BCT commanders to consider how we can

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13 Vehicles
- 3 x M270A1 Launchers
- M1068 POC
- 2 x M1097 HMMWVs with SCIPS
- 2 x M985 HEMTT Ammo Cargos
- M1078 LMTV Supply
- M984 HEMTT Wrecker
- M1113 Maintenance HMMWV
- 2 x M998 HMMWVs

Crew-Served Weapons
- 4 x M249 .50 Machine Guns
- MK19 Grenade Launcher

> * The LNO Section was augmented by one 2LT and a SGT 13P after initial testing to help ensure the platoon is integrated into the BCT's targeting process.

33 Personnel

Reconnaissance
- 2LT 13A FA Officer
- SGT 13M

Platoon Sergeant/Driver
- SFC 13M
- PFC 13M

Launcher Section
- 3 x SSG 13M
- 3 x SGT 13M
- 3 x SPC 13M

POC
- SGT 13P
- 2 x 13P10

Ammunition Platoon
- SSG 13P
- SGT 13P
- 2 x SPC 13P

LNO Section*
- 2LT 13A FA Officer
- SSG 13P
- SGT 13P
- SPC 13P

Commo/Medic
- SPC 68W
- SPC 25U

Maintenance
- SSG 63B
- SGT 63T
- 2 x SPC 63B
- 2 x SPC 94P
- SPC 92A

Legend:

MOS 13M =	MLRS Crewmember	**MOS 92A** =	Automated Logistical Specialist	**MOS** =	Military Occupational Specialty
MOS 13P =	MLRS Operations Automated Tactical Data Systems Specialist	**MOS 94P** =	MLRS Repairer	**PFC** =	Private First Class
		HEMTT =	Heavy Expanded-Mobility Tactical Truck	**POC** =	Platoon Operations Center
MOS 25U =	Signal Support Systems Specialist	**HMMWV** =	High-Mobility Multipurpose Wheeled Vehicle	**SCIPS** =	Standard Integrated Command Post System
MOS 63B =	Light-Wheeled Vehicle Mechanic	**LMTV** =	Light Medium Tactical Vehicle	**SFC** =	Sergeant First Class
MOS 63T =	Bradley Fighting Vehicle System Mechanic	**LNO** =	Liaison Officer	**SGT** =	Sergeant
				SPC =	Specialist
MOS 68W =	Health Care Specialist	**LT** =	Lieutenant	**SSG** =	Staff Sergeant

Figure 3: The Plug 'n Play MLRS Platoon Package

best package this capability to provide responsive precision fires without becoming a burden on BCT sustainment operations. The possibility even exists for the GMLRS unitary fires platoon to become organic to a BCT's fires battalion, providing the BCT commander with his own long-range PGM. Regardless, the Plug 'n Play GMLRS unitary platoon is one way we can provide PGMs to the BCT commander in a small, sustainable package.

Soldiers of C/3-13 FAR, 75th Fires Brigade, receive a GMLRS unitary mission briefing in support of the mission rehearsal exercise (MRE) of the 2nd Brigade Combat Team, 3rd Infantry Division, at Fort Stewart, Georgia, in March.

Lieutenant Colonel John A. (Jack) Kelly, Field Artillery (FA), is the Commander of 3rd Battalion, 13th FA Regiment (3-13 FAR), 75th Fires Brigade, Fort Sill, Oklahoma. He served as the Deputy Fire Support Coordinator (DFSCOORD) for Task Force Baghdad in the 1st Cavalry Division during Operation Iraqi Freedom (OIF) II; and at Fort Hood, Texas, as the Battalion Executive Officer (XO), S3 and a Brigade Fire Support Officer (FSO) in the 2-82 FA, also in the 1st Cavalry Division. He commanded A/3-9 FA, 214th FA Brigade, III Corps Artillery, at Fort Sill, and Headquarters and Headquarters Battery (HHB), also in the 214th FA Brigade. Among other assignments, he was a Firing Battery Platoon Leader for B/2-82 FA, 3rd Armored Division, in the Gulf for Operation Desert Storm (ODS). He holds a Master in Education from the University of Long Island, Brooklyn, New York.

FATC Becomes the 434th FA Brigade

The Field Artillery Training Center (FATC), Fires Center of Excellence (CoE), was reflagged as the 434th FA Brigade in a ceremony at Fort Sill, Oklahoma, on 17 April. The 434th FA Brigade is one of five Army training centers (ATCs) in the Training and Doctrine Command (TRADOC).

The 434th Brigade's mission remains the same as FATC's: receive, process and train volunteers in Basic Combat Training (BCT), Military Occupational Specialty (MOS) 13B Cannon Crewmember Advanced Individual Training (AIT), Warrior Transition Course and English as a Second Language. This training transforms volunteers into Soldiers who are Army Strong—demonstrate character and Army values, have a warrior spirit, are competent and confident in their warfighting and technical skills, and can contribute successfully to their first units.

FATC's history goes back to the FA Replacement Center established at Fort Sill in 1950 to fulfill the need for replacements during the Korean War. When the Korean War ended, the organization was inactivated and the Artillery Training Center was formed at Fort Chaffee, Arkansas. It was not until 23 April 1959 that Fort Sill became FATC's permanent home with activation of the brigade's 1st, 3rd, 4th and 7th Battalions.

From 1959 to 1975, FATC underwent several changes in both organization and size. During this period, FATC was assigned to the FA School and Brigade. On 1 July 1975, FATC was reestablished as a separate major command at Fort Sill. In February 1976, a new era began as FATC initiated one-station-unit-training (OSUT). Soldiers conducted both BCT and AIT in the same unit, initially only with MOS 13B. By 1978, five MOS were trained in OSUT. In 1984, FATC added a sixth MOS, 13M Multiple-Launch Rocket System Crewmember.

In 1978, the training and reception battalions were re-designated in accordance with the Army's combat arms regimental system. The next major change to the brigade took place in 2004 as the 2nd Battalion, 80th FA (2-80 FA), the brigade's AIT battalion, was inactivated and as the 1-78 FA, the brigade's support battalion, was designated the AIT battalion and assigned to the 30th FA Regiment (now the 428th FA Brigade). In January 2007, FATC closed the OSUT chapter in its history when 13B OSUT training ended.

Today's 434th FA Brigade is the largest FA brigade in the Army, training more than 20,000 Soldiers annually. It will continue to provide the quality training required to prepare the Army's newest warriors for the future.

LTC Thearon M. Williams, FA
Deputy Commander
434th FA Brigade
Fort Sill, OK

Photo by KW Hillis, *Fires Managing Editor*

COL Albert Johnson, Jr., Deputy Commanding Officer of the Fires CoE and Fort Sill, left, steadies the 434th FA Brigade's colors with the help of COL(R) Robert Grunewald while COL Annie Baker, Commander of the 434th FA Brigade, center, and brigade CSM Joseph D. Smith, right, unfurl the unit's new colors during a ceremony on 17 April at Fort Sill.

CMF 14:

Transforming for the 21st Century

By Lieutenant Colonel
Brant V. Dayley, ADA

As the 21st century progresses, Air Defense Artillery (ADA) continues its evolution into a mobile, modular, mission-tailored air and missile defense (AMD) force, fully compliant with the system-of-systems common operating environment (COE) and the Defense Information Systems Agency's Net-Centric Enterprise Services (NCES). Translated from "PowerPoint jargon," this means geographic combatant commanders will get the AMD capability they need when and where they need it to counter theater-specific sets of air and missile threats.

Quickly arriving in theater, a tailored AMD force will mesh smoothly into the battle management and control architecture. Once the air and missile threat diminishes, remaining AMD forces will be invaluable assets in theater because their sensor and surveillance systems will boost battlefield situational awareness (SA) and situational understanding (SU).

The transformation of ADA into this type of fighting force is having a tremendous impact on ADA force structure and ADA Soldiers, as indicated in Figure 1. Career Management Field (CMF) 14 specialists at the Air Defense Artillery School at Fort Bliss, Texas, are working to make the transformation to new systems, organizations and military occupational specialties (MOS) as smooth as possible.

Immediate warfighting needs statements submitted by combatant commanders to the Department of the Army (DA) invariably express requirements for more AMD systems, particularly Patriot Advanced Capabilities-3 (PAC-3) systems. *Help* is on the way.

ADA—A Growing Force. The active Army ADA force currently has three more Patriot battalions than it had dur-

MOS	2003	2005	2007	2008	2009	2012	2018	Beyond
14S[1]	Avenger		C-RAM →		SLAMRAAM Common TOC/IBCS		EAADS	SLAMRAAM EAADS Common TOC/IBCS
14M[2]	MANPADS →							
14J	Sentinel (Radar) GMD[4]	ABMOC ADAM Cell AMDPCS C-RAM JTAGS	JLENS			Common TOC/IBCS		JLENS Common TOC/IBCS GMD MMR
14E[3]	Patriot (Fire Control)		JLENS			MEADS (Sensor)		JLENS MEADS (Sensor) Patriot
14T[3]	Patriot (Launcher)	FBX-T			THAAD	MEADS (Launcher)		THAAD MEADS (Launcher) Patriot

Notes:

1. By the end of 2008, MOS 14S Soldiers in the ARNG will have most of the active Army Avengers. These weapons will be phased out with the fielding of SLAMRAAM. MOS 14S, formerly known as Avenger Crewmember, has been renamed AMD Crewmember.
2. MOS 14M is in the ARNG only; the MOS will be eliminated in late 2007 when MAN-PADS goes out of the inventory.
3. MOS 14E and 14T are in the active Army only. The Patriot missile system will be in the inventory until 2025.
4. Soldiers from any CMF 14 MOS, active force and Army National Guard, can man GMD.

Legend:

MOS 14E = Patriot Fire Control Enhanced Operator/Maintainer
MOS 14J = Air Defense Command, Control, Communications, Computers and Intelligence (C⁴I) Tactical Operations Center (TOC) Enhanced Operator/Maintainer
MOS 14M = Manportable Air Defense System (MANPADS) Crewmember
MOS 14S = Air and Missile Defense (AMD) Crewmember
MOS 14T = Patriot Launching Station Enhanced Operator/Maintainer
ABMOC = Air Battle Management Operations Center
ADAM = Air Defense Airspace Management
AMDPCS = Air and Missile Defense (AMD) Planning and Control System
C-RAM = Counter-Rocket, -Artillery and -Mortar

EAADS = Enhanced Area Air Defense System
FBX-T = Forward-Based X-Band Transportable Radar
GMD = Ground-Based Midcourse Defense System
IBCS = Integrated Battle Command System
JLENS = Joint Land-Attack-Cruise-Missile-Defense Elevated Netted Sensor
JTAGS = Joint Tactical Ground Station
MEADS = Medium-Extended Air Defense System
MMR = Multi-Mission Radar
SLAMRAAM = Surface-Launched Advanced Medium-Range Air-to-Air Missile System
THAAD = Terminal High-Altitude Area Defense System

Figure 1: Air Defense Artillery (ADA) Transformation Time Line. This figure shows the impact of ADA systems' transformation on the military occupational specialties (MOS) in Career Management Field (CMF) 14. The systems listed under "Beyond" are those the respective MOS will have during that time frame. This transformation time line assumes the designated systems will have funding for their development and fielding.

ing the opening stages of Operation Iraqi Freedom (OIF). By 2010, the force will grow to two more Patriot battalions and two maneuver AMD battalions (Avenger), for a total of 17 battalions. Six of these Patriot battalions will be AMD composite battalions with both Avengers and Patriots, each battalion with one Avenger and four Patriot batteries.

The tailored AMD force will be capable of defending against a wide array of hostile aerial and missile threats, providing combatant commanders an organic AMD that can rapidly deploy and interoperate seamlessly with joint and coalition forces.

The number of requirements for active Army ADA officers and warrant officers across the Army and joint AMD community is growing. In mutual
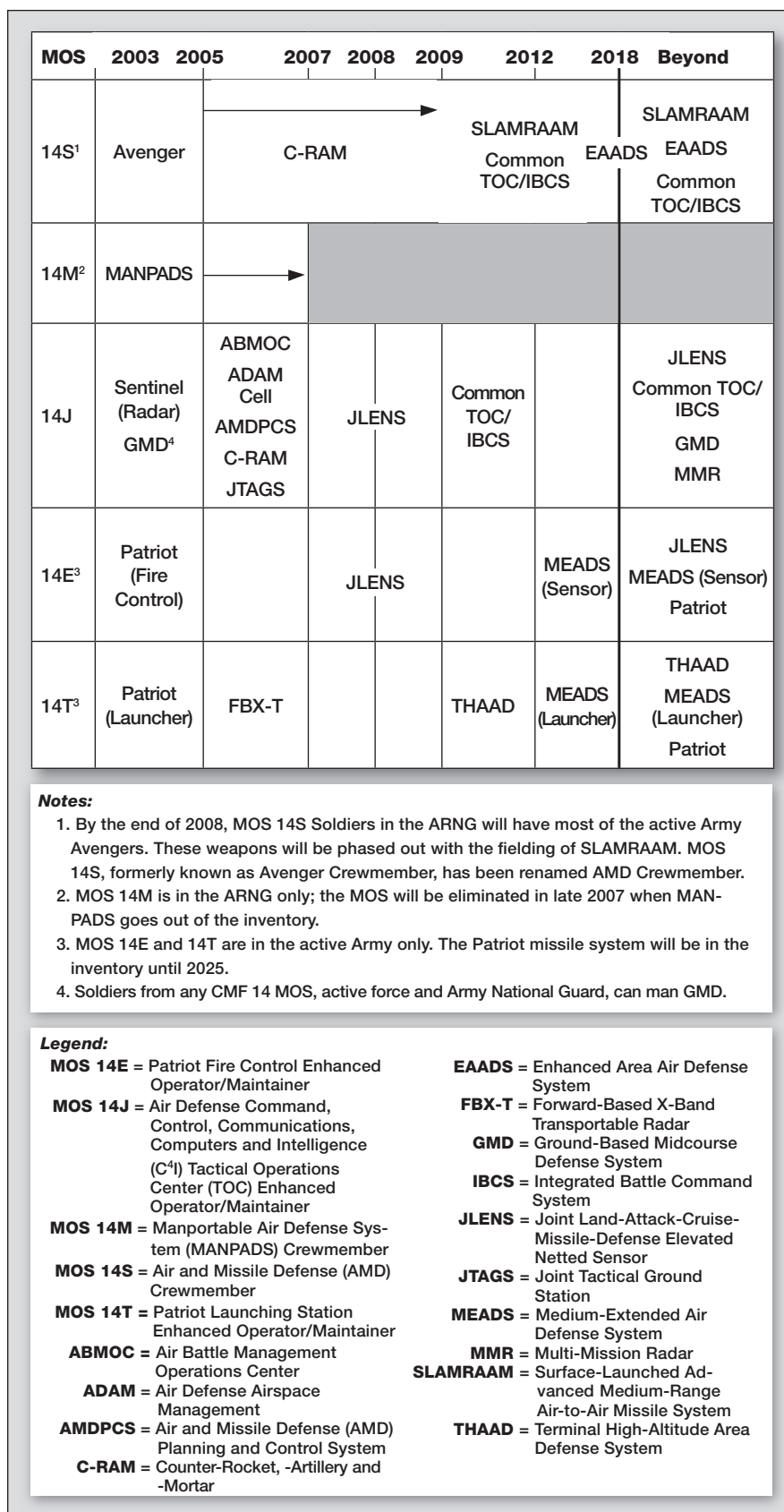
synchronization, ADA forces are being assigned to division-, corps- and Army-level commands and task organized to subordinate commands as evolving missions dictate.

These forces support combat operations across the operational spectrum, from forward operations with combat maneuver formations to the defense of critical strategic bases and geopolitical assets. ADA forces are ideally suited for and frequently used to support joint, interagency, intergovernmental and multinational (JIIM) operations.

As the Army transforms its warfighting elements into brigade combat teams (BCTs), ADA is embedding Air Defense airspace management (ADAM) cells in them as well as in fires brigades, combat aviation brigades (CABs), battlefield surveillance brigades (BfSBs) and, of course, ADA brigades. ADAM cells also are being fielded to the divisions and corps (one each per main and tactical command post) and at the Army level in the air defense element (ADE). ADAM cells enhance the management of airspace by coordinating targeting, airspace command and control, and early warning functions with AMD and aviation forces.

In addition, fielding ADA fire coordination officers (ADAFCOs) in Army AMD commands (AAMDCs) and ADA brigades enhances the ADA force transformation. Embedding the Joint Tactical Ground Station (JTAGS), Forward-Based X-Band Transportable (FBX-T) radar and Ground-Based Midcourse Defense (GMD) system within the Army Space and Missile Defense Command (SMDC) further complements ADA's transformation. (ADA officers and enlisted Soldiers are serving in CMF14-coded Space positions vice in Functional Area/Specialty Reporting Code [SRC] 40 billets.)

New weapons systems coming online will extend ADA's engagement capabilities far over the horizon and beyond the upper edge of the atmosphere and, concurrently, will expand ADA's force structure and increase manning requirements. Projected for fielding beginning in the second quarter of FY08, the Terminal High-Altitude Area Defense (THAAD) system will defeat upper tier theater missiles while Patriot continues to defend the lower tier. The remaining PAC-2 battalions will continue to pure fleet to PAC-3 with new radar sets (radar, its prime mover and a separate vehicle with the radar's power supply) and new

launcher stations (LS). Patriot gradually will morph into the more easily deployable and more mobile Medium-Extended Air Defense System (MEADS). (For near-term enhancements, see the article "Patriot Priority Enhancements and 'Pure Fleeting'—Keeping the Force Relevant and Ready" by Colonel Anthony J. English, ADA, in this edition.)

As the Surface-Launched Advanced Medium-Range Air-to-Air Missile (SLAMRAAM) system gradually replaces Avenger, new early warning and detection sensors will enhance ADA's capabilities. These include the Joint Land-Attack-Cruise-Missile-Defense Elevated Netted Sensor (JLENS) and Multi-Mission Radar (MMR).

Later into this century, AMD platforms employing new directed-energy or laser technologies will replace or complement these incoming AMD systems.

A New Career Path for ADA Officers. As ADA creates new organizations and fields new weapons systems, we are amending areas of concentration (AOCs) and rerouting career progression paths. ADA officers will continue to lead ADA Soldiers and NCOs engaged in non-traditional missions, such as convoy security missions, while ensuring they maintain the skills necessary to perform traditional AMD missions on conventional battlefields.

Like Pentathletes, the ADA officer of today and in the future must be multitalented, resilient and quickly adaptable. ADA already has bridged the "cultural gap" that once separated short-range Air Defense officers from high- to medium-altitude Air Defense officers by merging them into a single AOC. Today, new ADA lieutenants graduating from AMD Basic Officer Leadership Course (BOLC) III are assigned a single AOC—14A AMD Officer.

The Army has changed the traditional officer career path in the Officer Personnel Management System significantly. The recently updated DA Pamphlet (PAM) 600-3 Commissioned Officer Development and Career Management facilitates this shift toward developing Pentathletes. In DA Pam 600-3, "branch qualifying" assignments, such as battery command, have been replaced by "key and developmental" assignments, such as service in ADAM cells or in AAMDCs as ADAFCOs. ADA captains are officers-in-charge (OICs) of ADAM cells in fires brigades, CABs and BfSBs while ADA majors are OICs of ADAM cells in the BCTs. This allows ADA of-

Captains—
- Command an Air Defense Artillery (ADA) or other combat arms battery or company.
- Command a headquarters and headquarters battery (HHB) within an active Army ADA or other combat arms organization.
- Serve as an ADAM cell officer-in-charge (OIC) within a functional brigade (aviation, fires or battlefield surveillance brigade).
- Serve as an ADAM cell OIC or deputy OIC within a heavy, infantry or Stryker brigade combat team (BCT).
- Serve as a JTAGS/FBX-T detachment commander.

Majors—
- Serve as an ADAM cell OIC or deputy OIC within a heavy, infantry or Stryker BCT.
- Serve as battalion/brigade S3 or executive officer (XO) of an active Army ADA or other combat arms organization or special troops battalion.
- Serve as an Army air and missile defense command (AAMDC) deputy chief of operations.
- Serve as an ADA fire coordination officer (ADAFCO) in an AAMDC.

Lieutenant Colonels—
- Command at the battalion level (command selection list).
- Serve as brigade deputy commander or XO.
- Serve as an AAMDC chief of operations or chief of plans.

Figure 2: Air Defense Artillery (ADA) Officer Career Development Path

ficers to follow multiple career paths to lieutenant colonel and beyond. Figure 2 shows the more flexible career development paths ADA officers can follow.

The bottom line is that the Army's movement to modularity has increased opportunities for ADA officers. The new career progression paths provide much-needed flexibility as the Army continues to transform.

ADA Warrant Officers. AMD transformation is increasing requirements for ADA warrant officers at every echelon. One of ADA's greatest challenges, in fact, is recruiting enough warrant officers to meet the rising demand without lowering standards of excellence.

Several factors are causing this increase in demand. These include force design

changes, such as the continued fielding of ADAM cells as we stand up BCTs and functional brigades, the fielding of ADAFCOs and the activation of the 94th AAMDC at Fort Shafter, Hawaii. The introduction of new systems—THAAD, JLENS and SLAMRAAM—also will increase the demand for ADA warrant officers.

Warrant Officer *MOS 140A Command and Control Systems Technician,* particularly, is in demand. The Army's modular redesign calls for seven 140A warrant officers in each division: one in each of the three maneuver brigades, one in the aviation brigade, two in the headquarters and one in the fires brigade supporting the division.

With the addition of the two new Patriot battalions, warrant officer *MOS 140E Patriot Systems Technician* also is experiencing tremendous growth. Captain and lieutenant positions in the Patriot force are converting to 140E positions, including the lieutenant-level assistant fire control platoon leaders and tactical control officers in the ADA batteries and captain-level tactical directors in the ADA battalions. These conversions are ongoing and will allow the Patriot force to exploit the technical competence of ADA warrant officers while releasing lieutenants and captains to serve in more leadership-centric positions.

ADA is growing its warrant officer corps through increased accessions.

ADA NCOs and Enlisted Soldiers. Modularity has increased assignment and promotion opportunities for *MOS 14E Patriot Fire Control Enhanced Operator/Maintainer* and *14T Patriot Launching Station Enhanced Operator/Maintainer* Soldiers in the growing Patriot force. (See Figure 3.) With combatant and geographic commanders' requests for more PAC-3 assets, the Army

Avenger Soldiers from 1-4 ADA, part of Task Force Falcon, stand duty on the Kosovo side of the five-kilometer Ground Safety Zone (GSZ) separating Kosovo from the Federal Republic of Yugoslavia during Operation Joint Guardian, 8 August 2000.

Photo by First Lieutenant Tony Vitello, US Army

deployed a Patriot battalion to the Persian Gulf as part of the recent US troop surge. Last summer, the Army stationed another Patriot battalion, the 1st Battalion, 1st ADA (1-1 ADA), on Okinawa, Japan.

Continued growth of the Patriot force seems certain as the global ballistic missile threat grows more formidable. Assignment and promotion opportunities for Soldiers in MOS 14E and 14T will increase due to the near-term addition of two Patriot battalions and the projected future demand for Patriot force protection capabilities.

Patriot Soldiers also will crew MEADS and THAAD and operate JLENS. Some Patriot Sol-

diers will make the transition to THAAD as it is fielded while others will make the gradual transition to MEADS.

The title of *MOS 14S Avenger Crewmember* has been renamed *AMD Crewmember.* This MOS will see a slight additional decline in manning strength as SLAMRAAM begins replacing Avenger in about 2011. SLAMRAAM will provide expanded coverage of the operational environment, requiring fewer operators.

MOS 14J ADA Command, Control, Communications, Computers and Intelligence (C⁴I) Enhanced Operator/Maintainer will continue to experience tremendous growth as the Army fields ADAM cells. MOS 14J Soldiers also fulfill missions within AMD composite battalions, Patriot "pure" battalions, and maneuver AMD battalions. MOS 14J positions are prevalent throughout space organizations, such as in JTAGS, GMD and FBX-T detachments.

MOS Year	14E	14J	14R	14S	14T	Total
2007	1148	1679	147	1053	2028	6055
2008	1248	1731	118	961	2216	6274
2009	1306	1664	0	907	2268	6145
2010	1469	1716	0	901	2452	6538
2011	1543	1710	0	795	2462	6510
2012	1603	1723	0	794	2463	6583
2013	1663	1732	0	795	2464	6654

Figure 3: CMF 14 Transition Overview (Active Force)

ADA's transformation plan removed the Bradley Linebacker from the active Army inventory after its deployment with the 3rd Infantry Division in OIF I. However, *MOS 14R Bradley Linebacker Crewmember* Soldiers have a bright future. These Soldiers are reclassifying into other ADA MOS that are experiencing rapid growth. Also, as Bradley experts, other combat arms need their expertise, such as mechanized infantry and armored cavalry. These Soldiers will be reclassified by FY09.

The ADA School is conducting a comprehensive review of CMF 14 and developing a strategy for its overall MOS design. The school is reviewing the MOS critical tasks and career development paths of ADA Soldiers with the goal of all ADA MOS' falling in one of three functional categories: sensor, shooter or launcher. When the strategy is approved, this magazine will publish an article explaining the new MOS structure.

Ultimately, Soldiers in CMF 14 can look forward to faster promotions as the AMD force grows and broader assignment opportunities as AMD forces re-station with ADA units and organizations throughout the world.

Currently, however, the enlisted career progression path remains essentially the same. Figure 4 lists the positions that ADA Soldiers can expect to hold during their careers. These positions are sequentially developmental, each carrying increasingly greater leadership responsibilities. The career progression path is under revision and should be completed by FY08.

Army National Guard (ARNG) AMD Force. Before the War on Terrorism (WOT) and modularity, the ARNG AMD force rivaled the active Army AMD force in size with about 7,000 personnel spread across 13 states and Puerto Rico. Today, the ARNG AMD force has 4,550 personnel in seven states and Puerto Rico.

The ARNG provides AMD forces for WOT and plays an increasingly important role in national missile defense and homeland air defense. ARNG ADA Soldiers crew ground-based midcourse interceptors in Alaska and California and, on a rotational basis, defend the National Capital Region against air and missile attacks.

Some ARNG Patriot battalions have converted to combat support units while the remaining ARNG ADA units have converted into Avenger battalions. The latter will transition into SLAMRAAM battalions after the active Army has completed its SLAMRAAM fielding.

- Operator/Crew Member/Gunner
- Shift Leader/Team Leader/Team Chief
- Squad Leader/Section Chief/Section Leader/Assistant Operations Sergeant/Master Gunner
- Platoon Sergeant/Master Gunner/Detachment Sergeant
- First Sergeant/Intelligence NCO/Master System Evaluator
- Operations Sergeant/Sergeant Major/Command Sergeant Major

Figure 4: ADA Soldier and NCO Career Progression Positions

Avenger Soldiers from 1-188 ADA, headquartered in Grand Forks, North Dakota, recently deployed a prototype JLENS to Afghanistan. 1-188 ADA and other ARNG ADA units have distinguished themselves in combat while assigned to convoy security and force protection missions in Iraq and Afghanistan.

In February 2007, the Guard fielded the first ADAM cell in the ARNG to the 142nd Fires Brigade in Fayetteville, Arkansas. The ARNG will continue to field ADAM cells in its BCTs and divisions during the next several years.

MOS 14M Manportable Air Defense System (MANPADS) Crewmember, an MOS that is no longer in the active Army, also is being eliminated from the Guard as a result of Army modularity. The Guard expects to receive Human Resources Command's approval to convert Soldiers holding MOS 14M to MOS 14S. MOS 14M Soldiers who have not completed the Avenger portion of training or Phase II of the Avenger Crewmen Course will receive a Y2 additional skill identifier (ASI) to facilitate their conversion.

Digital rendition of SLAMRAAM courtesy of Raytheon Corporation

The futuristic Surface-Launched Advanced Medium-Range Air-to-Air Missile (SLAMRAAM) system gradually will replace the Avenger Air Defense system.

With downsizing completed, the ARNG expects ADA personnel authorizations across the board to increase in FY08 from 592 to 609 officers, 59 to 72 warrant officers and 3,905 to 3,949 enlisted personnel. In the near future, the Guard will need more ADA Soldiers and warrant officers as it fields SLAMRAAM and JLENS.

The projected growth in ADA personnel presented in this article is based on existing requirements and near-term force projections. AMD is expanding globally as Japan and NATO plan to deploy missile defense systems at home and abroad to defend against the growing air and missile threat. The US AMD force likely will continue to grow beyond modularity and transformation parameters by assuming responsibilities for new or expanded missions.

Any article that projects future AMD force capabilities and organizations risks creating the impression that the current AMD force may be somewhat inadequate—*nothing* could be further from the truth. Today's AMD force is the best in the world. Tomorrow's AMD force will take advantage of the transforming Army and advanced technologies to remain the worldwide AMD leader.

ADA Soldiers and leaders successfully made the transition from the antiaircraft guns of World War II to the surface-to-air missile systems of the Cold War to today's PAC-3 force. They will take 21st century AMD transformation in stride. To ADA Soldiers and leaders, the end state of AMD transformation that looked so futuristic in 2000 now looks like just another milestone in the history of ADA's continuing evolution.

Lieutenant Colonel Brant V. Dayley, Air Defense Artillery (ADA), is the Director of the Office of the Chief of Air Defense Artillery (OCADA) at the ADA School, Fort Bliss, Texas. He commanded the 1st Battalion, 7th ADA (1-7 ADA), 108th ADA Brigade, also at Fort Bliss. Among other assignments, he served as a Space and Missile Defense Policy Planner, J5, on the Joint Staff at the Pentagon; S3 for both the 11th ADA Brigade and 3-43 ADA, Fort Bliss; Missile Defense Analyst at the Missile and Space Intelligence Center at Redstone Arsenal, Alabama, part of the Defense Intelligence Agency (DIA), and Commander of a Bradley Stinger Fighting Vehicle Battery in the 3rd Infantry Division in Germany. He holds a Master of Military Operational Arts and Science from the Air University at Maxwell AFB, Montgomery, Alabama, and an MS in Operations Research from the Florida Institute of Technology.

Fires
Digital Photo Shooter's Guide

We prefer action digital photos—Soldiers/Marines or systems in actual operations or training vice posed or static. "Hi-Mom" shots of Soldiers or Marines in a group smiling and waving usually don't add value to the article—unless, of course, the photos were shot immediately following the cessation of combat operations.

Here are some steps you can follow to give us high enough resolution photos in formats we can use.

1. Shoot the picture at the highest resolution possible. Set your digital camera on the largest image size and the highest quality resolution the camera will allow. The highest resolution settings usually are called "High," "Super Fine" or "Ultra-High." Cameras set at "Standard" or "Basic" quality can sometimes produce images only good enough for websites or PowerPoint presentations, not publication in a magazine. Just because a photo looks good on your computer screen does not mean it is printable in *Fires*.

At *Fires*, we need high-resolution digital photographs. Translated into "megapixel talk," the photos should be no smaller than 2 megapixels, which is approximately 4-by-6 inches at 300 pixels per inch (ppi) or 16-by-24 inches at 75 ppi. For magazine covers and larger feature photos, we prefer 6 megapixels or more, which is approximately 6.5-by-10 inches at 300 ppi or 26-by-40 inches at 75 ppi.

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Depending on the compression ratio when the photo is saved in jpg, the closed file size of the photo will be 150 kilobytes (KB) or more. To find out the closed file size, right click on the photo file thumbnail, scroll to the bottom of the menu and select "Properties."

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DoD photo by SSG Alfred Johnson

Tactical IO in Afghanistan

—What the FSO Needs to Know

By Captain Andrew J. Knight, FA

Information operations (IO) is a key combat multiplier for the maneuver commander that now falls squarely on the shoulders of fire supporters at every level. The addition of the role of IO coordinator to the fire support officer's (FSO's) job means Artillery officers can expect to spend the majority of their nonlethal efforts developing and managing information campaigns. As the training of Field Artillery (FA) personnel in the realm of IO continues to expand for both officers and NCOs, fire supporters will contribute more than ever to success on the battlefield.

Everything that a unit does is IO. This simple statement leads to the larger truth—a counterinsurgency is an effort to persuade the population to support the government; so lethal operations support IO, not vice versa.

In this effort to gain the population's support, the actions of a unit speak volumes to the people and enemy about capabilities, attitudes and cultural understanding. Whether it is a conversation with the locals or a firefight with the enemy, Soldiers are managing perceptions. When leaders meet with local "power brokers," the desired end state is to manage local leaders' perceptions about the topic of discussion, the purpose of the operation or the value the US and Afghan security force presence adds to their lives.

The enemy also is trying to manage perceptions. His IO campaign has an advantage over the unit's because he knows the people better, having lived among them. The enemy also doesn't always deal in *facts,* which creates frustration on the counter-IO side; this seeming advantage is inevitably the enemy's downfall because it is easily overcome.

In our portion of Afghanistan, most enemy leaders did not view their IO as part of a long-term goal and assumed they could create an advantage by releasing outrageous propaganda. However, when they repeatedly lied, it worked against them. As elsewhere in the world, in Afghanistan, all liars eventually are discovered as such.

The trick for the IO officer is to hasten that discovery. This usually depends on the FSO's ability to demonstrate the truth to the population. In a rural environment where the people have little education, this can be difficult at times because news travels fastest by word of mouth, leaving

the less educated more apt to believe everything they hear. The susceptibility of an isolated rural population to rumor and propaganda characterized our IO operating environment in northeastern Afghanistan for 1st Battalion, 32nd Infantry Regiment (1-32 IN), *The Chosin Battalion,* in the 3rd Brigade Combat Team (BCT), 10th Mountain Division, deployed for Operation Enduring Freedom (OEF) VII.

The task of training units in IO is enormous, and the length of our training rotations at the National Training Center, Fort Irwin, California, and Joint Readiness Training Center, Fort Polk, Louisiana, did not allow us to achieve major goals, objectives and perception changes. It takes months to truly understand an area of operation (AO) and the population set—and months more to craft an IO plan that will cause a target population to view things from your perspective.

Based on my experience as a battalion FSO—called an effects coordinator (ECOORD)—responsible for 1-32 IN's IO campaign for 16 months in rural Afghanistan, I am writing this article to help future FSOs manage IO campaigns more effectively.

Pre-Deployment Preparation. To get started, you truly must "do your homework" on your future AO. If you are going to Afghanistan and think the people in your sector are Arab, then you already are "behind the power-curve." They are Pashtun.

The enemy you will face has the advantage of already knowing the people and culture better than you will on the day you step on the airplane to redeploy. To counter this advantage, you must do all you can to understand not only Islam, but also the local customs and key personalities in your AO.

Study the people and culture in your AO. The study of the Pashtun culture was at the center of our preparation. There are a few books that will give you a basic understanding of customs. Books such as *Pashtun Tales,* at first reading, appear to be a collection of incomplete stories and broken logic chains. (*Pashtun Tales* was edited by Aisha Ahmad and Roger Boase and published by Saqi Books, London, on 4 July 2003.) However, the book made me realize that the Pashtun people have a different perception of the world in general. This helped me to recognize that trying to understand the Pashtun culture by "mirror-imaging" my own thought processes would not help me influence the culturally different local population.

Before deploying to Afghanistan, we built IO "target" folders on provincial and district leaders as well as any elders or other key communicators in every village we could find. A target folder should contain the person's name, father's name, tribe, sub-tribe, any historical reporting on the individual, a summary of past engagements with military forces, and, most importantly, a photograph of the person. (In Iraq, information about whether the target is Sunni or Shiite is also important.) The more information you can gather on the IO target, the better you will understand the local population.

There are many sources for this information, including previous unit reports and the UN Assistance Mission to Afghanistan (UNAMA) and provincial reconstruction team (PRT) web pages. Making contact with the unit currently responsible for the AO can provide invaluable IO information and help you build target folders.

This information will shape your initial IO plan, but more importantly, it will start your company commanders out "on the right foot" with the population. The perfect scenario for a company commander is to receive an information packet on a village from his company FSO that contains all the information required to walk in and greet the local power brokers without being surprised by any issue that may arise.

Refine IO theme guidance from higher headquarters. Your higher headquarters will provide IO themes for initial operations. These themes will be broad and

Lieutenant Colonel Christopher Cavoli, Commander of 1st Battalion, 32nd Infantry (1-32 IN), and Captain Joe Evans, Commander of B Company, hold a shura with the elders of the Watapor District in the Kunar Province.

generally tied to lines of operations (LOOs) in the campaign plan.

You must refine these themes to make them apply to the target population in your own area. The key to creating battalion and company talking points from higher level themes is the specificity that you add.

The ability to craft messages that the people will not only understand, but also pass on to their relatives and neighbors is the key to managing perceptions for an entire district or province. The brigade headquarters has such a wide target set that it is virtually impossible to provide talking points that will resonate in all battalion or company areas.

For instance, convincing an urban population that the government can provide security for the population is much easier than trying to convince a rural population of the same thing. Cities have a higher concentration of law enforcement the world over, and citizens generally see police officers everyday. Those living in rural villages not connected by a main road may see a police officer less than once a week, making it more difficult to convince villagers of the security benefits the government provides through its policing effort.

In this case, actions speak louder than words. The best IO theme a battalion in a rural area can receive from a higher headquarters is an objective that physically demonstrates the IO theme, such as providing or helping the Afghan forces provide security for the population.

As the new IO coordinator, you will want to be guided through a step-by-step process to reach a stated objective. Our initial attempt at crafting talking points was probably not very effective because we did not fully understand the population and did not have their trust.

The operations order (OPORD) from my higher headquarters contained nothing but themes developed from the various LOOs. As a new battalion ECOORD, my first request for information (RFI) to higher headquarters was something to the effect of, "What do I say to these people to make them believe that?" The answer is strikingly simple: you link your desired reaction to factors that motivate your population. With time, you learn not only what to say, but also how to say it—as long as you stay actively engaged in seeking feedback from your efforts.

The key is to study what does and does not work, revise/continue your IO approach, study what does and does not work—in a continuous functional loop. It

is critically important during this learning phase to spot mistakes and correct them with the locals. Mistakes made in the learning phase can ruin the campaign if not handled quickly.

The way a talking point is presented is almost as important as what you say—sometimes more important. Methods of speech, greetings, proper behavior during opening prayers, removing shoes when entering a shura (an elders' meeting), removing sunglasses when meeting people, taking off body armor and weapons as a sign of respect and trust for the people you're meeting with, staying for lunch, asking about the elder's health and the health of his sons—all these can determine the effectiveness of your message. There is no "magic vault" of information that will immediately tell you how your population will react to new stimuli—you must know your target population and learn from your mistakes and successes.

Once you have the confidence and ability to manage the perceptions of your area's population, you will understand that themes are all that are necessary to accomplish the IO goals of your higher headquarters.

There is one truth that the IO coordinator must realize from the start: nobody should know more about the target population than you do. You must absorb information like a sponge and learn what factors contribute to the local decision-making process. You enlist the help of all Soldiers and NCOs in the battalion. Soldiers and NCOs provide feedback directly from the population.

Learning from your mistakes and successes will benefit your IO campaign the most. If a message is passed to the population and it causes them to take an aloof position in dealing with your unit, then you might want to reevaluate the statement and determine where you have erred while quickly hustling to control the damage it caused to the overall relationship. It took approximately four months of tireless reading of daily reports, debriefings and case studies to form a methodology that allowed our unit to manage how the population reacted to the messages we disseminated.

Reach a common understanding and mutual trust with the people. To influence the perceptions of your target population, you must reach a common understanding with them. This is the point where you comprehend what the target population believes and grasp their motivations. To reach this understanding, your target

population must trust you as looking out for their best interests.

The easiest way to achieve trust is to tell the locals you are going to do something and then do it. With them, you develop a common goal, work to reach that goal together, then give them all the credit for accomplishing it, regardless of who did "the heavy lifting."

This will be in stark contrast to the enemy who always takes credit for the slightest success, never attributing success to anyone but himself. Your target population will see the difference.

The enemy in Afghanistan struggles with his own inability to show the population tangible results. The people constantly weigh both sides of the conflict to determine which side to support based on which side will provide the most benefits.

To gain the support of the people, you must show that siding with the enemy not only brings no progress, but also destroys progress already achieved. The enemy cannot counter this argument, no matter how hard he tries, and any repeated attempts at degrading the positive impact your unit is having on people inevitably will work against him.

It is difficult for the average villager to believe that your unit's presence is a hindrance to his village when his son just started attending the new school your unit built or his family is receiving humanitarian assistance blankets in the middle of a cold winter.

By continuously attacking your good will toward the people, the enemy alienates himself from the people. A good IO campaign can expand that alienation and provide a unit the required maneuver space to destroy the enemy in a location that does not endanger the population.

Spread the message and build relationships. The three mediums most commonly used to reach the population are engaging the people face-to-face, broadcasting on the radio and distributing print products. The two most effective in our area have been engagements with the population and radio broadcasting.

The local populace propagating an IO theme is more effective than any other method of distribution. The most effective tool in disseminating messages to the population is the daily interaction of Soldiers with locals. From our initial operation, our battalion commander emphasized Soldiers living among the population whenever possible. Our unit did not conduct daily patrols from a forward operating base (FOB) with

Soldiers of C/1-32 IN engage locals along the unimproved Pech Valley Road. In cooperation with village elders and local sub-governors, C Company improved this rough road so the people could have a trafficable road to their provincial government.
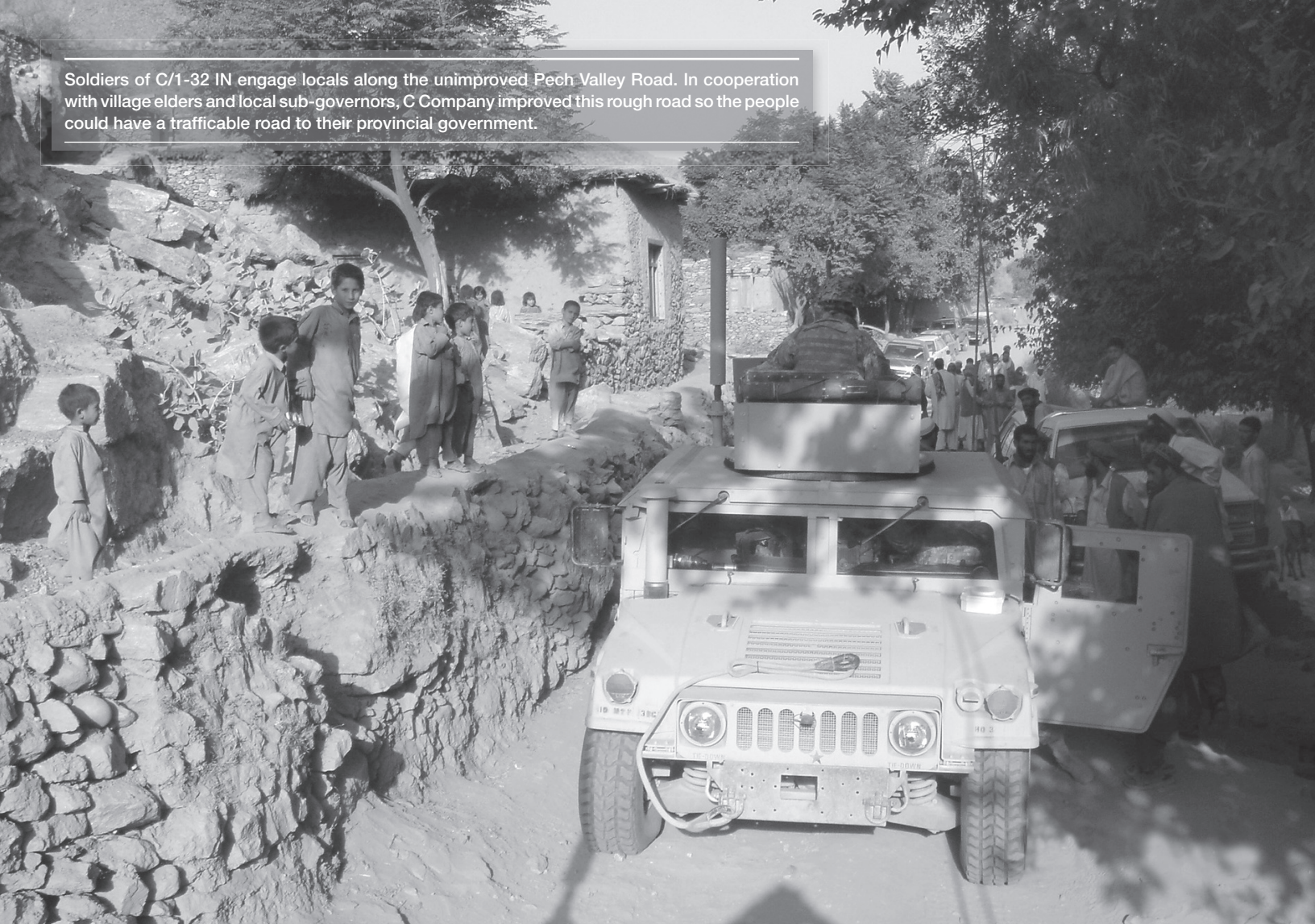
a few villages targeted each week, but constantly cohabitated with the people we wished to influence. This allowed the population to become aware of our presence at all times and for them to see that we do not have the undesirable characteristics that our enemy tried to lead them to believe.

The daily contact brings with it a level of familiarity from which trust eventually will grow. Establishing the trust of the population is essential for using IO to shape operations.

Other than the generally friendly nature of Pashtuns, village elders will continue to seek audience with your unit because they *want* to believe you will make their lives easier and create a future for their children. The overall battle for perception management is decided by the population's constant cost-benefit analysis.

Mutual trust is the first building block of establishing a relationship. Soldiers are your units' best means of gaining the population's trust. Local kids look up to our Soldiers as heroes, and Soldiers love

that. They naturally engage children, and everyone loves someone who loves children.

When the people no longer just want what you have to offer but want *you,* the conditions are set to move to the next level: turning things over to your trusted friends in the Afghan security forces.

Our second most effective tool in our IO campaign was FM radio. The most difficult task is building a listening audience. But it was not until our tactical psychological operations (PSYOP) team (TPT) conducted a survey of the population and found out what the people wanted to hear were we able to reach the mainstream. We made programming changes, such as playing the popular Pashto "Top Ten," local news and announcements from government officials and religious or population leaders. These changes built an audience that now complains at the front gate if the radio misses one day of broadcasting.

We also created a jingle that linked the station with a village or event and hired a

news reporter from the local population. We placed repeaters on the surrounding mountains to expand our broadcasting area by more than 200 percent.

Achieve the IO end state. Once you've established mutual trust, you can start to bring a level of complexity to your IO plan. The complexity will come with the introduction of objectives to support your goals and the unit's ability to measure the population's understanding of these objectives. For example, there are certain objective themes that are advantageous for the population to believe, such as "The enemy brings nothing but pain and suffering." This promotes the people's trusting the US and Afghan security forces—the goal.

Convincing the people that the enemy causes pain and suffering sounds simple, on the surface. But an enemy is often a person your target population has known for quite some time, so the people may not accept this objective theme easily. Therefore, you must use an intermediate IO step to achieve the objective—and, ultimately, the goal.

The intermediate IO step to support the example objective theme can be something like repeatedly asking if the enemy ever takes things from the people. Next you wait for a catalyst, such as an enemy attack against your forces in the vicinity of the population, and talk about the enemy's actions as proof of your IO objective theme.

It is often unwise in an IO plan to try to convince the population of the end state from the beginning because of the relationships between the population and the enemy.

Manage negative consequences. Inevitably throughout the course of fighting the war in Afghanistan or in Iraq, there will be undesirable events that harm a unit's relationship with the population. The nature of our business is dangerous, and in some cases, confusing. Events can include some harm to the local population of your AO. When this occurs, your solid relationships with key local communicators are more important than ever. It is easy for the enemy to capitalize on your mistakes, but it makes his job more difficult when a local leader openly continues his support for the security forces.

The trust of the population is immensely important because the people must believe you did not harm the innocent population intentionally.

There still will be backlashes from the incident, but mitigating the overall negative effects can allow progress to continue with the population. Meeting with the population quickly after the incident to discuss it gives the people a forum in which to vent their anger and frustration. This is uncomfortable but necessary to heal the damaged relationship.

After the elders have publicly aired their grievances, it helps to remind them of your sorrow for their losses and emphasize steps you both will take to prevent it from happening again. You also can mention the good things the security forces' presence have brought to the area and how future cooperation will ensure a better future for everyone.

Your next step is to allow the local nationals friendly to your cause to bring your unit back into the population's favor. After all, if you are successfully demonstrating your power against the enemy and providing the population with tangible goods and services, it only will be a short time before the event is forgotten.

Ignoring the event in the hopes that it will "blow over" is the best way to ensure that your relationship with the population is permanently damaged.

Tie the IO plan together. When we first arrived in Afghanistan, there was a distinct need for a road in the Pech River Valley of the Kunar Province. There is a large population in the Pech Valley that needed an easily trafficable road to tie it to its provincial government. The district sub-governors provided input from the beginning on the number of workers and security guards hired from their districts. Once the contractor agreed with the number of local laborers and security guards as well as the salary paid to each, the elders from each district were called in for a shura. At this shura, the elders received a briefing on the plan for road construction. The contractor was introduced to the elders in the Pech Valley so he would not be a stranger to them. The district sub-governors ensured that a proportionate number of the population from each village was employed throughout the contract.

The relationship between the contractor and the populace required daily maintenance. The foremen for the different road segments settled many disputes on their own, but the ultimate authority in the area remained the district sub-governors and C/1-32 IN. When the population took issue with the contractor, the person or persons tended to address the issue with the Soldiers, whom they trusted. Not wanting to solve Afghan problems, the company commander addressed the issue with the relevant district sub-governor and allowed him to mediate the disagreement to derive an equitable solution for all parties. In short, he empowered the sub-governors among their people while he opened the Pech Valley to the support of the provincial government.

The main theme used by US and Afghan security forces and the district sub-governors when they confronted issues related to the road's construction is "Everyone will benefit from the road." In the end, the people understood that the road was key to their economic growth, education, health care and future employment. When officials received a complaint about some perceived inequity, reminding them of the overall betterment for Afghanistan generally quelled the dispute.

Face-to-face engagements with the population increased greatly when the road work began. The military-aged males, once left idly at home or with weapons in their hands, were employed in areas that had heavy volumes of security forces traffic.

The short traffic delays created by the roadwork allowed Soldiers to talk to the workers or others. Simple talking points about the road's benefits to the area and Afghanistan as a whole helped gain the people's trust.

This road is a capstone IO event made possible by C Company's initial groundwork of living among the population for an entire year. Most locals along the road recognized individual Americans and Afghan soldiers and greeted them readily. The battalion disseminated IO themes to the entire population in a matter of hours as opposed to days or weeks. Delivering the messages that way is not as instantaneous as via radio, but the personal nature of sharing information face-to-face brings much more credibility to the messages.

Owning the ground and not running from a fight convinces the population that you are stronger than the enemy. The people always recognize who remains at the end of a lethal engagement. Artillery and mortar fires, while deadly to the enemy, also reinforce the people's perceptions of the security forces' capabilities. Our battalion fired more than 2,100 artillery and 2,650 mortar missions this year. The addition of IO to the workload of fire supporters increased the relevance of our artillerymen in counterinsurgency operations.

In northeastern Afghanistan, lethal and nonlethal effects were intertwined so closely that the FSO had two full-time jobs. However, the jobs and the FSO are a natural fit: when one officer is responsible for both the overall message and the fires that support those messages, great effects are possible.

Captain Andrew J. Knight, Field Artillery (FA), until recently, was deployed in support of Operation Enduring Freedom VII as the Effects Coordinator (ECOORD) for 1st Battalion, 32nd Infantry (1-32 IN), 3rd Brigade Combat Team (BCT), 10th Mountain Division, northeastern Afghanistan. While deployed to Iraq during Operation Iraqi Freedom I, he was the S4 of the 17th FA Brigade, part of III Corps Artillery. In 1-12 FA, also in III Corps Artillery, he served as the Battalion S4, Battalion Ammunition Officer/Headquarters Battery Executive Officer and a Platoon Leader at Fort Sill, Oklahoma. He is a graduate of the Ranger and Airborne Schools, both at Fort Benning, Georgia.

Patriot Priority Enhancements and "Pure Fleeting"—
Keeping the Force Relevant and Ready

By Colonel Anthony J. English, ADA

Air and missile defense (AMD) is a vital part of America's tactical and strategic defense force. From the Cold War through Operation Iraqi Freedom (OIF), Patriot AMD has been the backbone of the nation's defense against all types of threats, including air-breathing threats (ABTs) (for example, enemy aircraft), antiradiation missiles (ARMs) and tactical ballistic missiles (TBMs). To maintain relevance on today's and tomorrow's battlefields, Patriot forces must evolve and upgrade faster than the threats evolve. "Pure fleeting"—the transition of all Patriot units from the Patriot Advanced Capabilities-2 (PAC-2) configuration to the PAC-3 configuration—also is critical to that evolution.

History of PAC Upgrades. The Patriot weapon system originally was deployed to combat mass air attacks along the Fulda Gap in Germany, the most likely route for a hypothesized Soviet attack on West Germany. However, the threat of mass air attacks diminished with the end of the Cold War and the collapse of the Soviet Union. In the Cold War's aftermath, the US Army sought to develop Patriot's potential to defend against a different sort of threat—TBMs.

Five days after Iraq invaded Kuwait on 2 August 1990, the United States began deploying forces by air, land and sea to confront Iraqi forces, liberate Kuwait and defend Saudi Arabia. The initial Patriot forces that deployed for Operation Desert Shield had no capability against TBMs.

Patriot firing units had to incorporate software and missile enhancements as

they arrived in theater, giving the Patriot system an anti-TBM capability for the first time. By the time Operation Desert Storm (ODS) got underway on 17 January 1991, the Patriot force was prepared to carry out its new force protection mission—theater missile defense (TMD).

On 18 January 1991, A Battery, 2nd Battalion, 7th Air Defense Artillery (A/2-7 ADA), engaged the first surface-to-surface missile (scud) of ODS. During the course of that conflict, Patriots were deployed to Saudi Arabia, Israel, Bahrain and, eventually, Iraq where they performed admirably, serving as a deterrent to scud attacks.

After ODS, the Patriot went through a series of modifications to meet the rapidly proliferating TBM threat. The Patriot improvement program began with the Patriot Quick-Response Program (1992), which included PAC-1 (1995), PAC-2 (1996) and PAC-3 (2000). An enhanced version of PAC-3 as a post-deployment build was completed just before the start of Operation Iraqi Freedom (OIF) in 2003.

The Patriot role in OIF was to defend against TBMs and anti-radiation missiles. The Patriot deployment in OIF was substantial, involving 40 Patriot firing units from the US as well as 22 Patriot units from four allies in the Coalition Forces. These forces used two types of Patriot interceptor missiles: variations of the improved PAC-2 missile (the traditional Patriot interceptor) and a new "hit-to-kill" (direct hit) missile, using the enhanced guidance of the PAC-3 missile.

The Patriot force's performance against enemy TBMs was nothing less than spectacular. Patriot engaged all nine TBMs that threatened the operational environment. Independent sensors observed eight of these engagements, producing the data to declare the missions successful (conservatively). The ninth engagement was judged to be a probable success. The bottom line is that none of the attacking TBMs caused any loss of life to Coalition Forces or damage to critical assets.

Post-OIF Enhancements. After OIF, the Patriot weapon system's software and tactics, techniques and procedures (TTPs) had to be updated, just like they had been after ODS. Army identified fixes to correct deficiencies observed during OIF combat operations. ADA also continued its aggressive participation in joint interoperability programs to improve the commander's situational awareness (SA) and guard against fratricide.

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1. **Air-Ground Communications**—Enhance voice networks for increased participation in intelligence, surveillance and reconnaissance (ISR) networks.

2. **Blue Air Protect**—Make software improvements to the classification of potential targets as they are tracked.

3. **Joint Tactical Information Distribution System (JTIDS) Joint Range Extension (JRE)**—Increase the range of the Link 16 communications system.

4. **Identification, Friend or Foe (IFF) Mode IV**—Increase the identification of friendly systems and decrease interrogator faults.

5. **Embedded Data Recorder (EDR) Replacement**—Increase the reliability of data recorders.

6. **Radar Shroud Monitor**—Reduce the degradation of the radar's data due to electromagnetic interference.

7. **Classification Improvements**—Improve the classification of threats in a stressing (high-density target) environment.

8. **Air and Missile Defense (AMD) Training Center at Fort Bliss, Texas**—Upgrade the training facility to reflect current Patriot technology.

9. **Battery Command Post (BCP) Fielding Acceleration**—Increase the situational awareness (SA) of Patriot batteries by fielding the equipment needed to upgrade their BCPs.

Priority List for Hardware and Software Patriot System Enhancements

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At Fort Bliss, Texas, the Training and Doctrine Command's (TRADOC's) Capabilities Manager-Lower Tier (TCM-LT), 32nd Army Air and Missile Defense Command (AAMDC) and Lower-Tier Project Office developed a priority list to correct the combat deficiencies and obtained funding for nine hardware and software enhancements. These are listed in the figure.

The development, testing and materiel release for these nine enhancements are on schedule to be completed by the end of FY07. Several of these enhancements already have been fielded with the remaining in the process of being fielding. Based on the current Fort Bliss fielding schedule, all remaining fixes to OIF combat deficiencies will be fielded to Patriot units by the end of FY09.

The ADA School at Fort Bliss also has implemented doctrinal, training and organizational changes based on OIF lessons learned. These changes include requesting the addition of ADA fire control officer (ADAFCO) elements in the AMD command headquarters and developing fire coordination cells (FCC) in the AMD battalions.

Other ADA School changes include implementing the Patriot Top Gun Course, Patriot Master Gunner's Course and Joint Theater AMD (JTAMD) Course. These courses provide in-depth training on defense and mission planning for staff officers and NCOs at the battalion, brigade and theater command levels.

Pure PAC-3 Fleet. As the threat evolves, so does Patriot. The global proliferation of TBMs, cruise missiles, unmanned aerial vehicles (UAVs) and long-range rockets forces the AMD force to develop a mix of system improvements and TTPs to combat the proliferation.

Since OIF, every request for a contingency deployment of Patriot has required PAC-3 systems. Throughout the Pacific Command (PACOM), European Command (EUCOM) and Central Command (CENTCOM), combatant commanders have asked for PAC-3, our most modern and capable AMD weapon. In recognition of the high-demand/low-density of Patriot forces, in October 2006 the Army Chief of Staff directed the remaining three PAC-2 battalions be upgraded to PAC-3 by the end of FY09.

When the three PAC-2 battalions are fielded with the upgraded PAC-3 Patriots, the US Patriot force will reach pure-fleet status. Every Patriot battalion will be capable of the best AMD force protection that technology can provide and be configured to respond to any contingency.

PAC-3 Characteristics. The PAC-3 upgrades are to radar performance, joint interoperability and engagements with new generation threats with the hit-to-kill technology. The PAC-3 upgrades increase Patriot's range, accuracy and lethality to defend against TBM weapons of mass destruction (WMDs). PAC-3 missiles can defeat the vast majority of

short-range TBMs and destroy the full spectrum of warheads.

PAC-3 launchers can fire up to 16 missiles and still launch PAC-2 and Patriot guidance enhanced missiles, giving Patriot commanders the flexibility to engage targets with missiles best suited to the tactical situation. All PAC-3 equipment is transportable by C-17 and larger aircraft.

PAC-3 modernizations increase the missile's lethality and allow Patriot units to defend larger areas against TBMs. The PAC-3 upgrades increase coverage of the area of operations (AO) by tenfold. The upgrades to the missile system, radar and target processing enable the missile to intercept TBMs at higher altitudes with increased firepower.

Benefits of PAC-3 Pure Fleeting. As the Patriot force converts entirely to PAC-3 (becomes pure fleeted), there are clear benefits. Benefits in logistics and training area are some of the most important.

Logistics. Pure fleeting overcomes the mixed-configuration burden of having to buy, stock and ship two separate repair parts inventories. The current mixed configuration of the fleet adversely impacts the training and expertise of Soldiers in repair military occupational specialties (MOS), a consideration when assigning the right personnel to repair each equipment configuration.

Training. Currently, PAC-2 units are not deploying in support of rotations to replace units in Korea and other locations because they have not been trained or certified on PAC-3 and cannot "fall-in on" the PAC-3 units' equipment. To be eligible, PAC-2 units would have to train to standard on PAC-3 equipment before a rotation, requiring a minimum of four weeks of training (not including crew certifications to Tables V to VIII standards). That means PAC-2 units would have to borrow PAC-3 equipment for several months for conversion and deployment preparation training.

This complex situation is further complicated by recent re-stationing and transformation efforts. The result is that some PAC-2 and Patriot-based AMD composite battalions (Patriot and Avenger mixed) are not collocated with PAC-3 units, limiting their access to PAC-3 equipment.

Pure fleeting will resolve major logistical challenges and make all ADA battalions deployable and eligible for PAC-3 unit rotations.

Patriot remains the only combat-proven TBM killer; the modifications and improvements to Patriot will help ensure AMD success on the battlefields of tomorrow. The Chief of Staff's directive to pure fleet the Patriot force gives the combatant commanders the most modern AMD weapon available—keeping the Patriot force relevant and ready.

Colonel Anthony J. English, Air Defense Artillery (ADA), is the G3 of the 32nd Army Air and Missile Defense Command (AAMDC), Fort Bliss, Texas. He previously served as the Deputy Training and Doctrine Command (TRADOC) Capabilities Manager-Lower Tier (TCM-LT) at Fort Bliss, where he was responsible for AMD transformation issues. He also has been the Transformation Officer with the 6th ADA Brigade and commanded the 2nd Battalion, 43rd ADA (2-43 ADA), both at Fort Bliss; a Liaison Officer (LNO) to the US Joint Forces Command (USJFCOM) at the Ballistic Missile Defense Organization (BMDO), Washington, DC; S3 and then Battalion Executive Officer (XO) for 4-3 ADA in Germany; LNO for the Joint Task Force (JTF) AAMDC with the 69th ADA Brigade (Forward) in Kuwait; and an ADA Observer/Controller at the National Training Center (NTC), Fort Irwin, California. As Commander of A Battery, 5-62 ADA (Vulcan), Fort Bliss, he deployed to the Gulf during Operation Desert Storm (ODS). He holds an MA in Management from Webster University, St. Louis, Missouri.

Department of the Army Photo, 4 October 2006
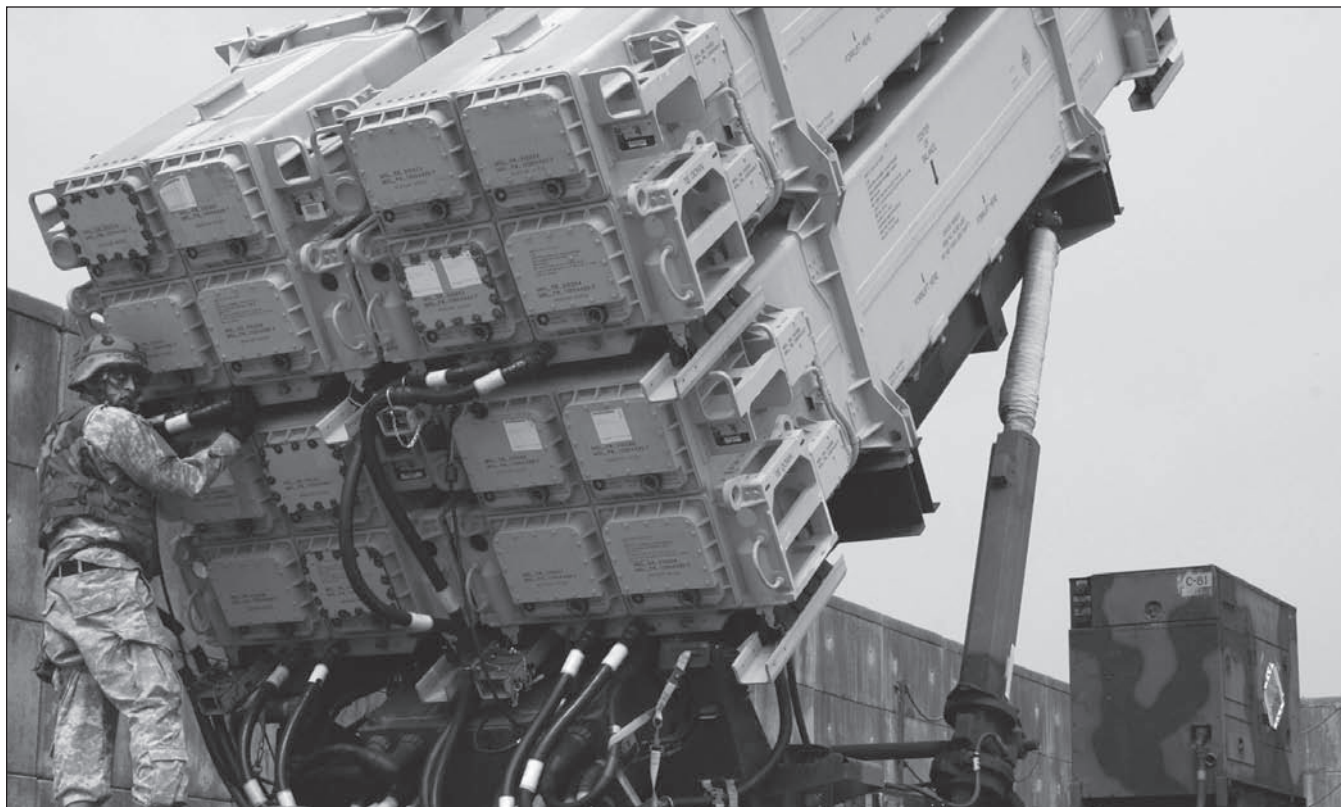
Specialist Daniel Nebrida from C Battery, 1-43 ADA, performs a maintenance check on a Patriot missile launcher.

Soldiers in the *Tomahawk* Battalion, 4th Battalion, 320th Fires (4-320 Fires), 101st Airborne Division (Air Assault), are back-to-back in a shoot-house live-fire exercise at Fort Campbell, Kentucky, in November 2005 before deploying for Operation Iraqi Freedom (OIF).

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